

**American Bar Association
Forum on the Construction Industry**

**Dealing with Mid-Course Adjustments in Project Planning
and Scheduling and Resultant Claims**

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I. Introduction

The well recognized phrase, “Rome wasn’t built in a day,” doesn’t tell the entire story. Recently discovered historical records, whose accuracy is yet to be verified, revealed that Rome was scheduled to be built in a day, but due to a shortage of labor and materials was delayed for centuries. Whether the contractors filed successful claims, and the Caesars paid over some of their hard won tribute as a consequence, is anyone’s guess. Eventually Rome got back on schedule, which allowed the contractors to use the non-impacted period for a “windowing” or “measured mile” approach to their claims, only to be disrupted once again by the invasion of the Vandals and the Visigoths, which are the origin of the term “*force majeure*,” in case you didn’t know. And, if you don’t know what those terms mean, you really do need to read this article. In the modern world, delay and disruption to a project are certain to result in claims. How the delay is handled on a project, documented, mitigated, and, ultimately, resolved, are all the subjects of this paper.

We all have anecdotal stories about cases that we have handled involving these issues. Consider this, your contractor client comes to you and says, “I’m building a ride and show area at a major Florida amusement park, and the Swiss-made ride, which I have a subcontractor erecting, has been delayed, and not only is the ride not arriving in the sequence in which we have it scheduled, but what we are receiving is out of spec and has to be returned. My dilemma is that the owner is ordering me to revise the schedule and build the theme restaurant and show area

¹ The authors gratefully acknowledge the assistance of Gregg E. Hutt, Esq., associate of Trenam Kemker, Tampa, Florida, in the preparation of this paper.

first, which was scheduled to go last, which will require me to not only change the entire sequence of my work, but, ultimately, erect the ride over the restaurant, which will be much more difficult and time consuming, not to mention more expensive, and it will have to be done at night when the restaurant is closed or create an unacceptable danger to the restaurant's patrons. The owner must have the restaurant open for the Christmas/Hanukkah holiday season, and also tells me that he has spent millions of dollars on advertising that the ride will open in the spring and therefore cannot grant any time extensions. He has rejected my schedule showing that the ride will not be completed till mid-summer. What do I do?" While this may sound like a hypothetical question that you might find on a construction certification exam, it is not far from reality. Or how about this example: the owner of a condominium comes to you and says, "I have to comply with the Interstate Land Sales Act,² and must have the condo completed in 24 months or be forced to return deposits which, in this market, my purchasers would like nothing better. I have just learned from the contractor that the structural engineer has created serious errors in under-designing the penthouse slabs, and that there are numerous errors, omissions, conflicts and discrepancies with respect to the plans for the elevator cores and roof steel. The contractor tells me that it called these areas to the attention of the structural engineer nine months ago at the pre-construction constructability review, but that nothing had been done by the structural engineer until these items became critical. The project will now be delayed unless I accelerate the contractor, which he is willing to do for several million dollars. I advised the structural engineer, who has notified his errors and omissions carrier, but I am told that nothing can be done by the carrier in any short period of time and that I will be forced to pay the contractor for acceleration,

² The Interstate Land Sales Act is a Federal law, administered by the U.S. Department of Housing and Urban Development (HUD), which requires certain disclosures and advertising procedures when selling land to purchasers in other states.

or force the contractor to accelerate without pay, to get the building completed. What do I do?” These are not uncommon scenarios. In fact, in a hot construction market, they are quite common. There are no easy answers. But this paper will explore both the legal and scheduling issues that arise from these types of scenarios, provide practitioner’s tips and suggested methodologies to resolve the inevitable claims that will result.

II. Using the Schedule as an Effective Management Tool

The complexity of construction cannot be overstated. Beyond the massive coordination effort that occurs prior to even receiving the building permit, the process of building is a daunting task, requiring the efforts and coordination of countless parts and people working under the pressure of time. In analyzing a delay claim one court began:

We note parenthetically and at the outset that, except in the middle of a battlefield, nowhere must men coordinate the movement of other men and all materials in the midst of such chaos and with such limited certainty of present facts and future occurrences as in a huge construction project...³

Undoubtedly, the planning and use of a project schedule is one (and probably the first) key for effective management and successful performance. To this end, the schedule is important for detecting delays and making “mid-course adjustments” to avoid them. The necessity for thoughtful and effective scheduling practices, however, is not limited to executing the work, but is required to succeed in advancing or defending a delay claim.

Effectively addressing and asserting your client’s position in the resolution of a delay and disruption claim dispute necessarily requires an understanding of scheduling. Contractors and practitioners must understand that the construction schedule is more than just a graphical representation of the contractor’s plan and intention to perform the contract scope of work. As a management tool, the schedule is used to plan and coordinate the work, monitor and control

³ *Blake Construction, Inc. v. C.J. Coakley Co., Inc.*, 431 A.2d 569 (D.C. 1981).

progress, evaluate and document changes, and is often used to prove or defend claims. The schedule is also a “road map” outlining the flow and sequence of work and, therefore, must be accurate enough to foresee and resolve problems but flexible enough to allow for unavoidable changes. It should allow the owner, design team, and contractor to “see the forest and not just the trees.”

A Critical Path Method (CPM) schedule is a management technique used to plan and control a project.⁴ A CPM schedule combines all relevant information into a single work plan, defines the sequence and duration of operations, and depicts the interrelationships of the work activities required to complete the project. *The critical path is defined as the longest sequence of interrelated activities in the network which establishes the minimum length of time for completing the project.* A CPM schedule also enables one to determine the amount of time activities can be delayed without impacting the overall project completion. The amount of time a specific activity may slip before impacting project completion is identified as “float.”

Typically, the contractor is the principal developer of the CPM schedule and, thus, should maintain control of the schedule. A schedule that is utilized and updated regularly will be more accurate and more likely to represent the contractor’s intentions during the project. Scheduling information provided to subcontractors should reflect the needs and goals of the project. Soliciting input from subcontractors will increase the accuracy of the schedule and provide an accountability tool to control the project. Because the owner will hold the contractor accountable for maintaining on-time performance during execution of the project, the contractor should manage the sequencing and/or schedule logic. If the schedule becomes too complicated,

⁴ The use of CPM to plan, schedule and manage construction projects has become the accepted standard in the construction industry. See e.g., *Al Johnson Construction Co. v. United States*, 854 F.2d 467 (Fed. Cir. 1988). Moreover, given the number of Federal, state and board decisions that have discussed and relied on CPM methods, it appears that it is the method widely accepted and required by the courts.

it may become a progressive as-built, documenting the work as it is built, instead of a planning and forecasting tool, too simple, and the schedule becomes ineffective and unrepresentative.

In addition to its use as a valuable management tool, a schedule that is accurately maintained during construction provides a sound basis upon which to measure and apportion delays. The basic technique used in evaluating delay claims with a CPM schedule is to compare planned progress with actual performance at various points during the project. Thus, the key to documenting and resolving delay claims begins with the quality of the schedule and its updates. To understand the scheduling process you also need to familiarize yourself with the correct terms. For example, understanding the “baseline schedule” may be key to quantifying delay, while “milestones” in the contract do not necessarily measure delay-related impact. Here are some key concepts for the effective use of schedules as a management tool:

A. *Baseline Schedule*

The *baseline schedule* is a document which illustrates the contractor’s *original* work plan to perform the scope of work in accordance with the contract documents. The baseline schedule provides a snapshot of the project at the time of contract bid/award from which progress and the affect of changes are measured. Because the baseline schedule is prepared early, it is not contaminated with project history, actual events, or changes in the plan. The baseline schedule should be logical, reasonable, and supportable without apparent flaws. The overall flow or sequence of the work should reflect the manner in which the project is planned to progress. The baseline schedule should be prepared, submitted, and approved in accordance with the contract documents. A time-scaled graphic of a simple baseline schedule is shown below in **Figure 1**. Logic relationships and critical activities are shown on the graphic.

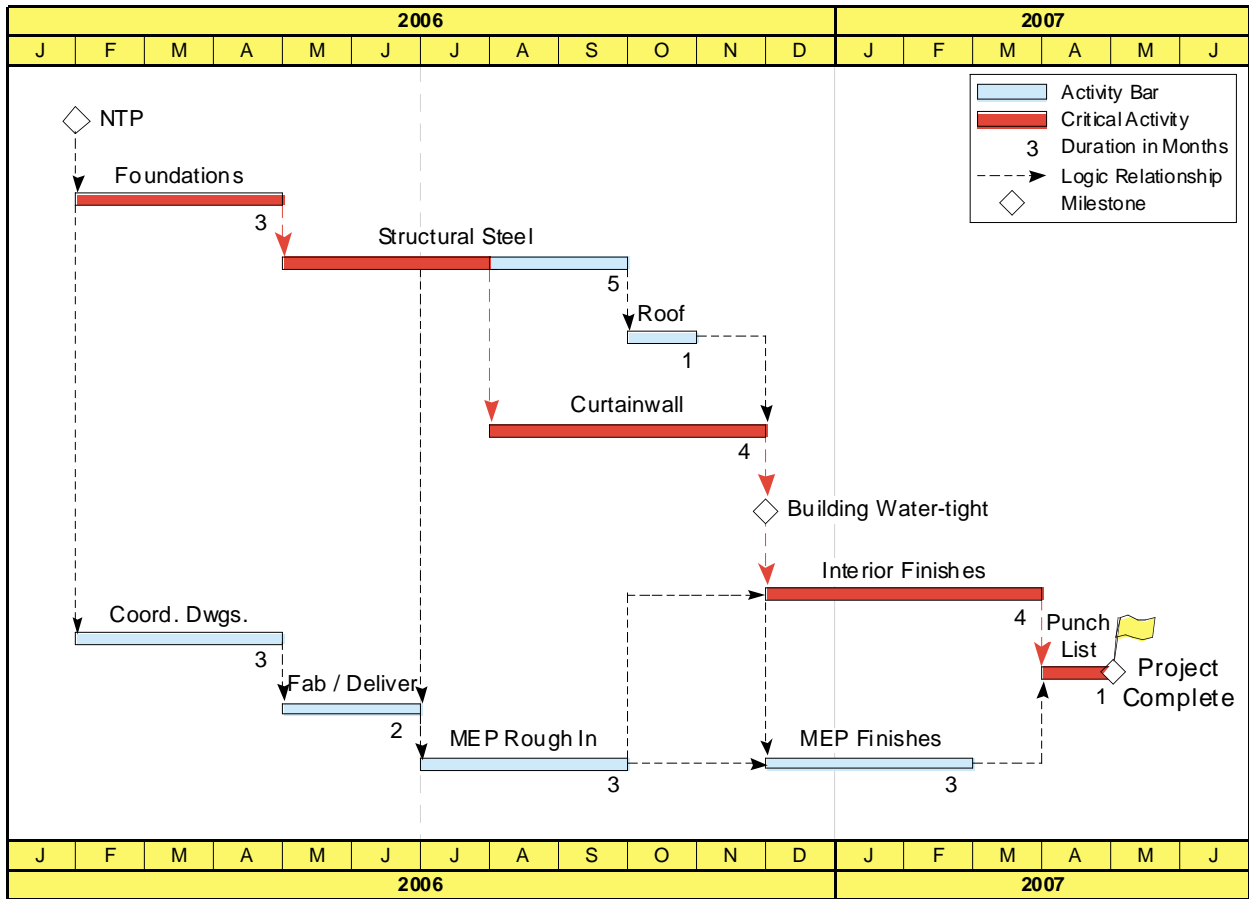


Figure 1 – Baseline Schedule

The same baseline schedule is shown in **Figure 2** printed in a bar chart layout, as typically used on a construction site. The bar chart layout shown is from a standard industry scheduling software package, Primavera Systems.

Flexibility is thereby sacrificed. Milestones should only be used as necessary to represent important events, completion of specific activities for coordination of other trades, a basis for the start of successive work, or completion of specific areas of work. The baseline schedule shown above in **Figure 1** includes milestones for notice to proceed, building water-tight, and project complete.

Some specifications require schedules to be “cost loaded” and/or “resource loaded.” Cost loading is the process of breaking down the cost of the contract work and assigning dollars to each scheduled work activity. The underlying assumption is that the costs are expended as the duration of the activity is completed. The cost loading will be more accurate if material costs are factored out from labor costs and included in procurement/delivery activities.

Resource loading is the process of assigning labor and equipment resources to individual activities. While a helpful tool in planning and scheduling, it may be difficult to get accurate information on resources from subcontractors. In addition, in some instances, not all of the subcontracts are bought out when the schedule is prepared and therefore, not all of the resource information is available at the time the schedule is first developed. Knowing these terms and how they fit into the overall picture can assist in understanding and quantifying delay, and thus, in resolving delay claims.

2. Approval (Owner’s Refusal to Accept)

The schedule is the contractor’s plan and intention to perform the contract work and reflects its means and methods. The owner generally maintains a contractual right to review and approve the contractor’s schedule, but not to dictate means and methods. Review of contract requirements, such as milestones, phases or completion dates and owner activities, such as

approvals or deliveries; level of detail; and sequencing, are all appropriate. Overzealous review of detail regarding activity durations, logic restrictions, and level of detail can be considered interference by the owner and may, in and of itself, be cause for a claim.⁵ Likewise, an owner's refusal to approve or accept changes to the schedule could be considered interference or otherwise grounds to assess liability for delay or acceleration claims.

Timeliness of submittal and approval of the schedule is also important. When the submission of the initial schedule is "very late," both the contractor and the owner are prejudiced by actual events and a clean submittal and approval becomes difficult because of conditions learned subsequent to the bid. When this condition occurs, owners typically spend considerably longer review time, reject the schedule, or approve it with reservations; all of which tend to reduce the usefulness and effectiveness of this important management tool. If the schedule is not approved before it begins to be impacted by project events, approval becomes complicated. The schedule review may become a "chess match" between the parties with each taking a defensive position. Approval of the baseline schedule may be used as a tool to assess a delay claim. A timely review and approval, even with conditions or reservations, will benefit all parties in the long term.

There are unique challenges for approval of schedules on multiple prime projects due to the fact that more than one contractor contracts directly with the owner for specific elements of work on the same project. Buy-in of the schedule by all of the prime contractors is often difficult to achieve. The development of a detailed schedule coordinating the work of the multiple primes from the contract milestones or pre-bid schedule is, in many cases, delegated to one of the prime contractors, usually the general contractor, who doesn't have privity or control

⁵ Active interference by the owner is a well-recognized exception to "no damage for delay" clauses. *See infra*, § III.E., for an explanation of this clause.

over the other primes. Therefore, as a practice tip, if an owner is using a Construction Manager, the Construction Manager should be made contractually responsible for coordinating with the multiple primes to develop the overall project schedule.

B. *Schedule Updates*

The schedule is dynamic and needs to be updated regularly, usually monthly, to accurately reflect the progress of the project. The update process is used to document the progress of the work, make necessary logic revisions, incorporate changes, and to record actual dates that activities were started and/or were completed. At all times, the contractor should maintain a copy of the baseline and each successive periodic update for record keeping purposes.

1. Progress

In order to accurately update the schedule, the status of all work activities in process or completed needs to be determined. This is done by assessing the remaining duration or percentage of completion of these activities and recording the information in the schedule update. The update forecast will properly reflect the remaining work and the current path of activities to achieve project completion.

Cost loading adds an extra level of complexity and negotiation to the schedule update process. Disputes may arise over the percentage completion based on duration or costs. Progress on activities should be measured based on the remaining duration of work, and not on remaining cost to complete.

2. Logic Revisions

The logic and sequence of events needs to be reviewed with each update. The progress of the work and other events may require logic revisions. Logic needs to be reviewed and adjusted to reflect changes in the planned sequence of work, additional work, and delays. As

work is completed, retained logic may drive relationships between activities that are inaccurate. These logic relationships need to be corrected in the updates to maintain accurate logic through the remaining work.

3. Fragnets

Fragnets are essential scheduling tools for making midcourse adjustments in project planning and scheduling. The term “fragnet” is a common expression in the scheduling industry and is an acronym for “fragmented network.” Fragnets are strings of activities and logic that are added into a schedule to forecast the possible impact and coordination required to introduce a new scope, delay, or new means and methods of construction. A fragnet is a useful tool during an update that documents a schedule impact caused by change orders, or possibly material substitutions. For example, material substitutions may affect the procurement time or procurement process, especially if custom fabrication is introduced, such as millwork. A properly developed fragnet can help both parties determine the schedule adjustments needed to incorporate changes. An example of a fragnet to incorporate changes in roof steel is shown in **Figure 3** below. The fragnet was added to the first update of the previously referenced baseline schedule.

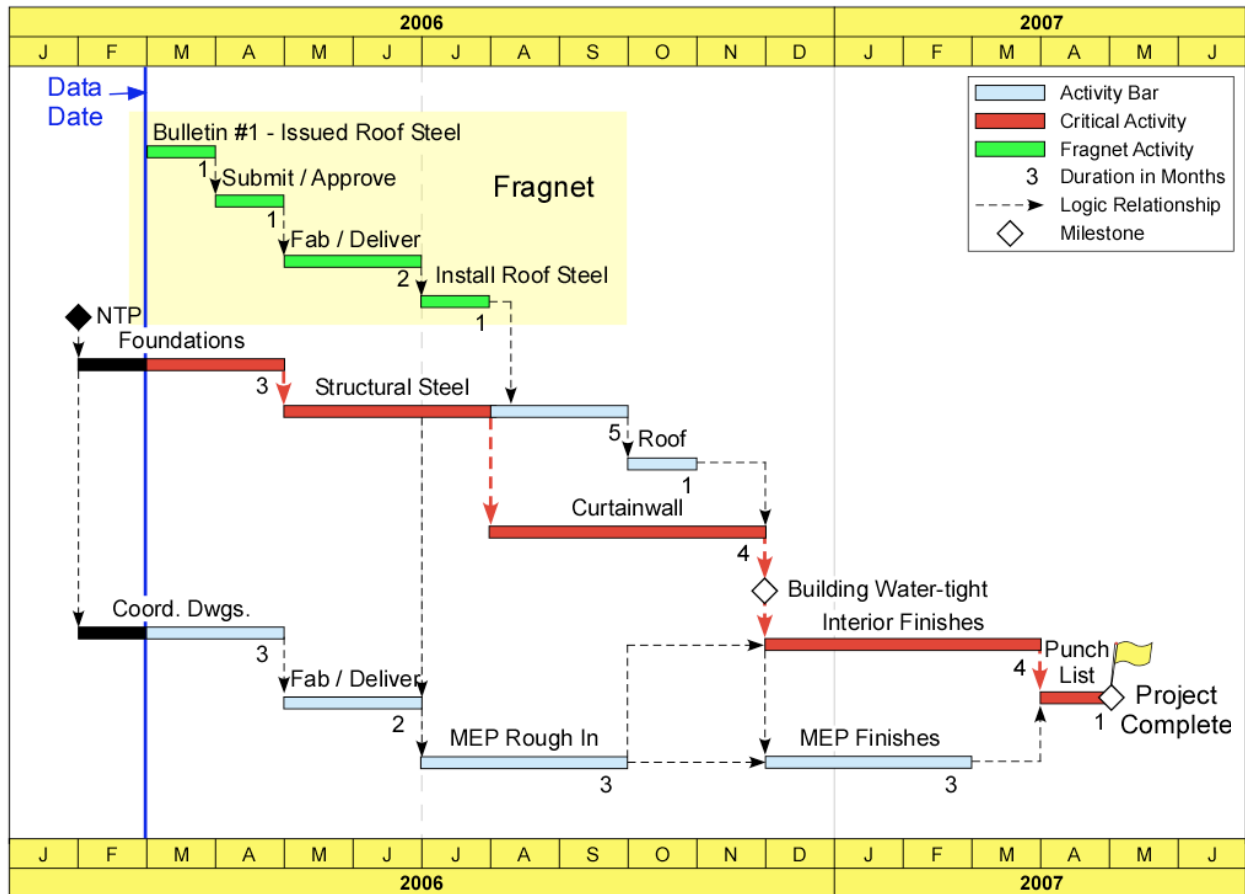


Figure 3 - Fragnet

A fragnet can be used to support a claim for delay and impact to a schedule by showing new or revised activities added to a CPM which identify and assess the time impact associated with a delay-causing event by projecting the time relationship of the event to past, current and future-projected delays. A series of fragnets isolating discrete delay-causing events and their time impact in relation to the overall CPM schedule can be a powerful tool in supporting a delay and impact claim.

4. Actual (As-built) dates

Schedule software programs include the capability to record actual start and completion dates as schedule activities progress. These are referred to as “actual” or “as-built”

dates. If the baseline schedule was properly updated during construction, the actual start and completion dates for the various activities are recorded contemporaneously.

In many instances the as-built information within the CPM schedule can provide a reasonably good record of actual events. However, the schedule does not track intermittent starts and stops in the progress of an activity, so it is still advisable to verify the actual dates against the project record. A detailed as-built schedule can be developed from the basic project records, such as daily inspection reports, diaries and logs, progress reports, photographs, and delivery tickets. Efforts should be made to accurately record all as-built information. As-built data is essential for a proper delay analysis, if a dispute later arises. A typical example of an as-built schedule is shown below in **Figure 4**.

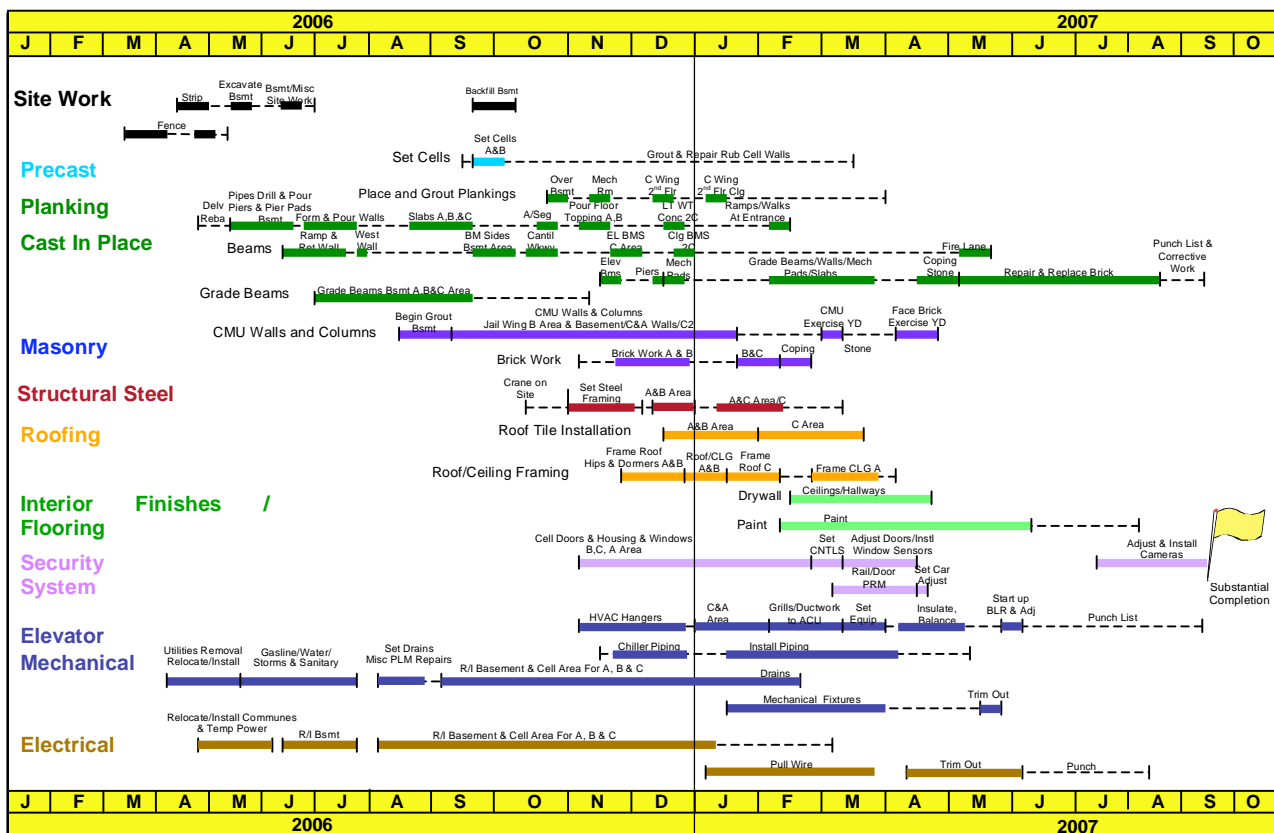


Figure 4 - As-Built Schedule

C. *Analysis of Progress and Delays*

Once the schedule is updated, the critical and near-critical paths need to be reviewed. Typically logic changes are made and durations compressed when the actual progress cannot meet the original planned progress. Adjustments can be made based on logic restrictions, resources and available materials. Not all changes are manipulated. As conditions change over time, the schedule needs to reflect these changes. The project schedule provides an appropriate and accepted vehicle for recording changes as progress is updated. A specification restriction prohibiting schedule changes, such as changing logic or activities, is unreasonable.

The contractor should notify the owner when delays have occurred. If the delay is caused by the contractor, efforts should be made to recover time. If the delay is caused by the owner, reasonable efforts should be made to mitigate or recover time, giving notice to the owner of these efforts.

D. *Notice Provisions*

Beyond issues associated with delays, communication between the owner and the contractor (or between the contractor and subcontractors) regarding the progress of the work is good practice, benefiting all parties involved in the project. Successful projects are the result of multiple parties engaging in regular communication, giving their input towards achieving the project goals. “The requirement of timely notice provides project participants with an opportunity to develop either a contingency plan or an immediate workaround plan.”⁶ Additionally, constant communication about the various aspects of the work “may more effectively preserve good will and productivity.”⁷ Without ongoing communication, delay claims and potential damages associated therewith may unnecessarily be exacerbated to the point

⁶ NEAL J. SWEENEY, WILEY CONSTRUCTION LAW UPDATE §4.04 (F), 1999.

⁷ *Id.*

where the various forms of dispute resolution (discussed in Part VII below) either become impossible or more costly than necessary. Yet, not only is providing notice of schedule delays a particularly important aspect of the communication process, it also is a crucial step in preserving construction delay claims.

The purpose of “notice” is to give the recipient of the notice an opportunity to take action that would avoid or mitigate potential liability. Legally, proper notice acts to shift the risk of contractual liability.⁸ Particularly with respect to claims for delay, disruption or work stoppage, notice provides the owner or its design professionals the opportunity to contemporaneously investigate and record the facts and events surrounding the claim, which could be used to compare against the contractor’s back-up when a change order or claim for additional time or money is submitted. Giving proper notice of a schedule delay or disruption is a contractor’s first step toward perfecting its delay claim. Similarly, from the owner’s perspective, failure to give proper notice may give rise to a defense, mitigation and/or avoidance of the delay claim. Thus, the timing and sufficiency of notice are often disputed issues when litigating whether or to what extent a delay, disruption, or acceleration claim is compensable. Parties, therefore, must be cognizant of the issues that may affect the validity and legal effect of notice.

Sophisticated construction contracts make giving notice of a delay claim to the owner or its representative a contractor’s affirmative duty. Typically contractual notice provisions provide precisely when notice of a delay must be given, to whom it must be given⁹, and the manner in

⁸ See *J.S. Alberice Construction Co. Inc. & Martin K. Eby Construction Co., Inc. (Joint Venture)* ENGBCA No. 6178, 98-2 BCA 29875. (Noting that the Government was not liable for delays when the contractor’s failure to give timely notice denied the Government an opportunity to take reasonable measures that could have prevented a potential delay; had the contractor properly noticed the Government, the delay would have been attributable solely to the Government).

⁹ Notice may be ineffective when it is given or received by a person who had not previously been authorized pursuant to the construction contract to give or receive notice. See *Callanan Industries, Inc. v. Olympian Development, Ltd.*, 639 N.Y.S.2d 185 (App. Div. 1996).

which it must be served. Further, notice provisions may specify the form and content of a delay claim. A contractor's failure to timely and faithfully follow the contractual terms may preclude its claim for delay and related damages.¹⁰

Failure to give timely (or contemporaneous) notice of a delay-causing event may bar a claim for damages flowing from the delay. In *Healy/Yonkers/Atlas-Gest v. City of New York*,¹¹ the contractor brought a claim against the city for substantial delay damages. The contract between the parties required the contractor to notify the city within five days after the commencement of any damages for which it would claim compensation. The contractor, however, did not provide notice within the contractually stated time and the city moved for partial summary judgment on the grounds that the contractor failed to comply with the contract, which required contemporaneous notice. The court granted the city's motion, finding that strict compliance with the contract's notice provision was a condition precedent to asserting the contractor's claim.

Compliance with the contractual notice provisions also may require notice even when the owner is clearly aware of the delay. In *M. J. Lee Construction v. Oklahoma Transportation Authority*,¹² the owner suspended the work for a lengthy period of time. The contractor did not notify the owner of this delay-causing event, despite the clear contractual requirement that written notice be given to the owner within ten days of knowledge of the claim. The court held that the contractor's failure to follow the notice procedures was deemed a waiver of its delay claim. A similar result was reached in *Dugan & Meyers Construction Co. v. Ohio Department of*

¹⁰ In a recent arbitration, the failure of a subcontractor to give the contractually required notice of alleged contractor-caused delays, and to request time extensions, completely undermined the subcontractor's argument that it was not the sole cause of delay on the project.

¹¹ 685 N.Y.S. 2d 244 (App. Div. 1999).

¹² 125 P.3d 1205 (Okla. 2005).

Administration Services,¹³ where the contractor failed to provide notice of a pending delay because the owner had already established its position in denying the claim. The court held, however, that even if it were likely that the owner would have denied the claim, the contractor was required to provide notice in accordance with the terms of the contract as a condition precedent to recovery.

To the extent provided in the contract, proper notice may include identifying with specificity the nature, extent, cause and cost of the delay. If such information is not included, the notice may be deemed insufficient to permit the contractor's recovery of delay damages. In *Nab-Tern-Betts v. City of New York*,¹⁴ the city moved for summary judgment on the grounds that the contractor failed to provide sufficient documentation to constitute proper notice. The court denied the motion and made it clear that a factual issue remained as to whether the contractor provided documentation supporting its claim in a manner that complied with the contractual notice requirement. Thus, there was a triable issue as to the sufficiency and effect of the notice. Further instructive on this issue is *Heckler Electric Co., Inc. v. City of New York*.¹⁵ Like *Nab-Tern-Betts*, this case arises in the context of the city's motion for summary judgment, which the court granted. The agreement between the parties provided that where the contractor is damaged due the fault of the city, the contractor must "file with the Engineer an itemized statement of the details and amount of such damage" otherwise it risks forfeiting its claim.¹⁶ Notwithstanding the fact that the contractor complied within the contractual notice period, the court found that the contractor's notice fell short on the information required by express terms of the notice provisions. Although the contractor had sent several letters to the city notifying it of the delay,

¹³ 834 N.E.2d 1 (Ohio Ct. App. 2005).

¹⁴ 660 N.Y.S.2d 424 (App. Div. 2005).

¹⁵ 715 N.Y.S.2d 619 (App. Div. 2000).

¹⁶ *Id.* at 621, fn 1.

none of them actually set forth the categories of delay damages with their amounts.¹⁷ The court noted:

Indeed, plaintiff fails to differentiate between the various items of delay damages [and] to specify the dates on which each item was incurred... Even if the damages for various times could not be ascertained until after the delays had their effect, plaintiff gives no explanation for its failure to produce an itemized statement of the damages until the filing [of its claim] nearly two years after the substantial completion of the work. Nor does plaintiff make any showing as to why it could not have estimated various items of damage while the delays were occurring, assuming that it could not ascertain the actual damages during such time.¹⁸

Providing notice to subcontractors by the contractor can be problematic. What happens, for example, if the contractor provides written notice to its window supplier that the failure to timely provide windows in accordance with the schedule has prevented dry-in of the building and delayed its progress, when, at the same time, the contractor is notifying the owner that dry-in of the building has been prevented by completion of the roof? Is the contractor's notice, designed to force the window supplier to provide temporary protection at its cost, inconsistent with the contractor's notice to the owner that errors and omissions of the owner's designer have prevented the work from progressing? As a practitioner's point, the letter to the subcontractor can be written in such a fashion as to put the subcontractor on notice of a potential claim without actually constituting an admission by the contractor that it is its own subcontractor which is delaying the critical path when, in fact, the contractor intends to later take the position that the errors and omissions in the owner's plans and specifications delayed the critical path. The efforts of the contractor to force its window manufacturer to provide temporary protection, a relatively minor cost, could result in the loss of a greater claim for owner-caused delays to the critical path. Practitioner's Point: The lawyer representing contractors should instruct his or her

¹⁷ *Id.* at 633.

¹⁸ *Id.* at 624-625.

clients on how to draft notice letters to subcontractors; lawyers representing owners should look to the subcontractor files first in defending a delay claim against the owner.

E. *Risks and Liabilities Associated with Failing to Maintain or Use the Schedule*

It has often been said that you cannot manage what you cannot measure. Certainly this maxim applies to construction. Construction scheduling is the way in which contractors manage and measure performance of the work. Contemporaneous updates to the schedule maintain the integrity of the schedule as a management tool, and the importance of regularly updating the construction schedule during the course of performance cannot be overstated in managing and measuring the effect of delays. Construction CPM schedules are vital to proving entitlement to recovery.

The failure to regularly maintain and update the project schedule places the party attempting to recover for alleged delays at a disadvantage in proving delay and may even preclude recovery. In *Fortec Constructors v. United States*,¹⁹ the Government attempted to rely on the project schedule to deny the contractor's delay claim. The court, however, rejected the Government's position and stated:

...the Court cannot overlook the fact that neither party appears to have used the CPM in evaluating contract performance. Since [the contractor's] CPM was revised only once during performance and then without regard to the effect of prior delay claims on the project not acknowledged by [the Government], its use after the fact as a gauge for measuring time extensions plainly is improper.²⁰

A contractor's failure to abide by its own schedule runs the risk of being liable to its subcontractors for delay damages. Case in point is from the South Carolina Supreme Court, *Hunter Brothers System, Inc. v. Brantley Construction Co., Inc.*²¹ Pursuant to the prime contract,

¹⁹ 8 Cl. Ct. 490 (1985), *aff'd*, 804 F.2d 141 (Fed. Civ. 1986).

²⁰ *Id.* at 508. The *Fortec* court further explained that maintaining an updated schedule to identify and quantify delay damages on a project necessarily includes reflecting delays on the schedule as they occur.

²¹ 332 S.E.2d 206 (S.C. 1985).

Brantley, the contractor, prepared a detailed schedule identifying all construction activities. According to the schedule, Hunter Brothers, the electrical subcontractor, was to install certain conduit after the roof was installed. During construction, the project experienced delays and, concerned about the assessment of liquidated damages, Brantley directed Hunter Brothers to proceed with its work despite not having the roof in place. Hunter Brothers refused to proceed for obvious reasons, which included Brantley's refusal to accept responsibility for damage to the work being performed out of sequence. In a lawsuit that ensued for delay claims by both parties, the court rejected Brantley's claim for damages, and placed all liability with Brantley for failing to follow its own schedule.

A similar result was reached in *Chaney & James Construction*.²² In *Chaney* the contractor's CPM schedule was completely rejected where, in part, the contractor's project manager admitted that the sequence shown on the critical path charts was not followed in performing the work. The board went on to hold that:

Under the circumstances the critical path charts cannot be accepted as establishing either the facts they portray or the reasonableness of the contractor's assertions as to the influence of specific incidents on work progress.

Abandonment of the construction schedule can actually be a delay-causing event entitling subcontractors to damages. For example, in *Natkin & Company v. George A. Fuller Company*,²³ the contract documents provided that a CPM schedule would be followed by all parties and that the contractor would be responsible for preparing the original logic diagram and keeping it current. During construction, however, the contractor failed to schedule the activities and control the work in accordance with the sequence established in the CPM. In the court's analysis, it concluded that the contractor's failure to comply with the CPM was an abandonment of the

²² FAACAP No. 67-18, 66-2 BCA (CCH) ¶ 6066, at 28,076, 28,077 (1967).

²³ 347 F. Supp 17 (W.D. Mo. 1972).

schedule, and that the abandonment of the schedule caused delays to the subcontractors with congestion and material problems. The contractor was held liable to its subcontractors for delay and disruption to the work.

III. Contributing to and Documenting Responsibility for Delay

Best-made plans often go awry, if not awry entirely! No matter how carefully and detailed a schedule is prepared, the reality is that the best of schedules will encounter mid-course adjustments. Material and labor shortages or disruptions are unpredictable. As the court in *Blake Construction* commented on the construction process, “[e]ven the most painstaking planning frequently turns out to be mere conjecture and accommodation to changes must necessarily be of the rough, quick and ad hoc sort, analogous to ever-changing commands on the battlefield.”²⁴

To the extent that the contract time is extended beyond the expected completion date, one or more parties may be liable for delay. The legal obligations and rights associated with the concept of delay arise from the obligation implied in every contract that one party will not delay, hinder, or interfere with the performance of the other party. Thus, whether the owner or the contractor (or subcontractor, as the case may be) is legally and, perhaps, financially responsible for the consequences of delay depends upon a determination of the event(s) and party(ies) contributing to the delay. The understanding of delay and its causes is a “formidable undertaking” by the finder of fact. The *Blake Construction* court suggested the importance of documenting delay when it stated:

[I]t is a difficult task for a court to be able to examine testimony and evidence in the quiet of a courtroom several years later concerning such confusion and then extract from them a determination of precisely when the disorder and constant readjustment, which is to be expected... on a job site, become so extreme, so debilitating and so unreasonable as to constitute a breach of contract between a contractor and a subcontractor.²⁵

Therefore, documenting delay is the foundation of one's claims. The first step is notice to the affected party.²⁶ From there, effective documentation of delay requires contemporaneous updates to the schedule and an understanding or determination of whether the delay is excusable or non-excusable and then whether it is compensable or non-compensable.

A properly managed and updated CPM schedule is the most effective model to evaluate construction delay. In order to calculate delay damages, it is necessary to determine which work items and delays impacted the critical path of the project, thereby extending the project completion date. Delays occurring along activity paths with float are called non-critical delays. In simple terms, non-critical delays do not impact the project completion date until all of the available float is consumed, at which time the activity becomes critical.

A delay is either "excusable" or "non-excusable." Excusable delay may either be "compensable," in which case the contractor is entitled to an increase in contract sum due to the extended time, or "non-compensable," in which case the contractor is only entitled to an extension of its contract time. The construction contract normally defines the specific terms for time extensions and project delays.

A. *Excusable Delays*

An excusable delay is a delay that "excuses" a contractor's late performance. An excusable delay is not traceable or attributable to the contractor's actions or inactions, and

²⁴ *Blake Construction, supra* at note 3.

²⁵ *Id.*

²⁶ For a detailed discussion on notice, *see supra* § II.D.

oftentimes is the result of an event that is unforeseeable and beyond the control of the contractor. Typical unforeseeable events can be *force majeure* events (discussed below) or unusually severe market forces that the contractor could not reasonably have anticipated, overcome or avoided. In recent years, events like Hurricane Katrina and the shortages of labor and material in the overheated worldwide construction market have caused delays and disruptions to projects. Likewise, the recent and prolonged “building boom” has strained the resources of governmental agencies charged with regulating construction projects, which also has contributed to project starts and inspection delays. To the extent a contractor arguably could not have anticipated these conditions, the delays associated with them would be excusable, but not compensable.²⁷

Other events beyond the contractor’s control that are excusable include those instances where the owner “delayed, hindered, or interfered” with the progress of the work. Common forms of these events occur when the owner’s representative or agent failed to properly or timely inspect or direct the work, authorize change orders, provide timely approvals and decisions, respond to the contractor’s requests,²⁸ or coordinate other contractors.²⁹ Additionally, an owner is responsible for its consultants. When, for example, the contractor is delayed because the owner’s consultant furnished defective drawings or specifications, or failed to timely review and return shop drawings or Requests for Information (RFIs), the contractor’s late performance will be excused.³⁰

²⁷ Absent such extreme and unusual events or market forces, a contractor’s delays due to a subcontractor’s or material supplier’s performance likely would not be excused. *See e.g., M.C. & D. Capital Corp.*, ENGBCA No. 4820, 88-2 BCA ¶ 20, 708.

²⁸ *State Highway Dep’t. v. Hewitt Contracting Co.*, 155 S.G.2d 442 (Ga. Ct. App. 1967); *see also Steffek v. Wichers*, 507 P.2d 274 (Kan. 1973) (noting that owner interfered with performance failing to follow terms of contract and failing to have architect perform a final inspection).

²⁹ *Baldwin-Lima-Hamilton Corp. v. United States*, 193 Ct. Cl. 556 (1970); *Howard P. Foley v. J.L. Williams*, 622 F.2d 402 (8th Cir. 1980).

³⁰ *National Steel and Shipbuilding Co. v. United States*, 40 Fed. Cl. 579 (2001); *Southern New England Contracting Co. v. State*, 345 A.2d 550 (Conn. 1974).

Generally, when a delay is excusable, the contractor is entitled to a time extension (i.e., an increase in the contract time), which would grant relief from liquidated damages or actual damages caused by the delay. Further, as discussed below, excusable delays are either compensable or non-compensable, depending on whether the contractor is contractually entitled to be compensated for additional costs and time-related damages during the extended period of the contract time.

The fact that a delay may be deemed “excusable,” however, does not automatically entitle the contractor (or subcontractor, as the case may be) to an extension of contract time. An excusable delay requires proof that the delay was on the critical path and that it actually extended project completion. This premise has been set forth in *Hoffman Construction of Oregon v. United States*,³¹ wherein the contractor asserted damages based upon alleged government caused delays. To prove its claim, the court required that the contractor show that the critical path of the work actually prolonged the completion date. In this regard, the court stated:

The reason that the determination of the critical path is crucial to the calculation of delay damages is that only construction work on the critical path had an impact upon the time in which the project was completed. If work on the critical path was delayed, then the eventual completion date of the project was delayed. Delay involving work not on the critical path generally had no impact on the eventual completion date of the project.³²

B. *Force Majeure*

Most contracts include a provision for extension of time for conditions or events that are unforeseeable or outside of the control of the contractor or the owner. Such events are considered *force majeure* events, which may either suspend or excuse performance. Although never officially attributed to the civil disturbances caused to the Roman Republic by the Vandals and the Visigoths, a typical *force majeure* clause reads as follows:

³¹ 40 Fed.Cl. 184 (1998).

Neither party shall be liable in damages or have the right to terminate this Agreement for any delay or default in performing hereunder if such delay or default is caused by conditions beyond its control including, but not limited to Acts of God, Government restrictions (including the denial or cancellation of any export or other necessary license), wars, insurrections and/or any other cause beyond the reasonable control of the party whose performance is affected.

Force majeure events are commonly known as “acts of God,” and often have included delays associated with severe weather, labor strikes, and acts of war. In the current construction market, they may even include unforeseeable labor or material shortages. The scope of events that encompass a *force majeure* delay, however, must be specifically identified in the terms of the construction contract.³³ When a *force majeure* delay occurs, neither party is at fault or responsible to the other party for the delay. The *force majeure* delay is therefore excusable but non-compensable, in which case the contractor’s sole remedy is an increase in the contract time.

The application of a *force majeure* clause will depend upon how broad or narrow the clause is drafted and whether the event at issue falls within the express language of the clause. To the extent that the event causing delay does not squarely fall within the contract’s *force majeure* clause, a court may find that the contractor assumed the risk of delays and unexpected changes in construction conditions. In one such instance, a contractor incurred delays in construction of an airport fire station due to the events of 9/11, but was unable to recover for its losses. The project began before the terrorist attacks, but the contract expressly required strict compliance with all airport security measures including entry and exit procedures. After 9/11, security measures increased substantially causing significant slow downs in accessing the airfield and ultimately in performing the work. The court clearly recognized that 9/11 and its aftermath was unforeseen and beyond the contractor’s control. Looking at the contract, however, the court

³² *Id.* at 198.

³³ For example, an act of terrorism may not be deemed an “act of war.” See *Pan American World Airways, Inc. v. Aetna Casualty & Surety Co.*, 505 F.2d 989 (2d Cir. 1974).

noted that it “did not anticipate any extraordinary delays resulting” from such an event. According to the court, there were numerous provisions in the construction contract suggesting that any risk of loss for unexpected changes in conditions was to be fully assumed by [the contractor].” The court, therefore, denied the contractor recovery for the 9/11 related delays.

C. *Non-excusable Delays*

Non-excusable delays are schedule delays that are within the control of the contractor, its subcontractors or suppliers. These delays are generally performance related and include instances where the contractor has made mistakes resulting in delay (a concrete formwork blow-out is a good example), or has failed to properly supervise or schedule the work. Non-excusable delays also occur when a contractor or subcontractor has failed to timely and adequately furnish materials or equipment to the project.³⁴ By entering into the construction contract, the contractor obligates itself to furnish the materials for the project as specified. With this obligation comes the contractor’s responsibility to determine that all such materials are available or can otherwise be secured to fully perform within the contract time.³⁵ For example, in the appeal of *M. C. & D. Capital Corp.*, the Government specified a unique single-ply roof that was not readily available. When, after approximately one-third of the contract time had lapsed, the contractor attempted to order the roof, it learned that delivery would take several weeks. Ultimately, the contractor was unable to complete the work on time. When the contractor brought its claim for extended contract time, the court denied any extension related to the delay in obtaining the specified roofing materials because the contractor itself delayed in ordering them.

When a contractor is unable to complete the project on schedule as a result of non-excusable performance-related delays, the contractor will not be entitled to a time extension. In

³⁴ *M.C.&D. Capital Corp.*, ENGBCA No. 4820, 88-2 BCH ¶ 20, 708.

³⁵ *Id.*

this instance the owner may be able to assess liquidated damages or actual damages for late completion. The owner's ability to be fully compensated for the delay, however, may be subject to the contractor's ability to show owner-delaying conduct occurred contemporaneously with the contractor's delayed performance, that is, concurrent delay.

D. *Concurrent Delay*

Sometimes during the course of construction different events causing delay to the critical path will occur at the same time. When the contractor and the owner are responsible for delaying the project during the *same time period*, the delay is deemed a "concurrent delay." Delays are determined to be "concurrent" when two or more delays occur in the same time period on separate critical paths with both affecting the overall completion of the project. If either of the events had not occurred, the project would have been delayed by the other event. To the extent two independent delays (i.e., a contractor-caused non-excusable delay and an owner-caused excusable delay) are concurrent, the contractor will not be entitled to additional money and the owner will not be able to recover liquidated or actual damages.³⁶ Typically, concurrent delays result in an extension of time, but do not give rise to an entitlement to damages by either party. As one court has held, "if a period of delay can be attributable simultaneously to the actions of both [the owner] and the contractor...the result is an excusable but not a compensable delay. Thus, a concurrent delay is excusable and non-compensable."³⁷

³⁶ *Beckman Construction Co.*, ASBCA No. 247, 83-1 BCA ¶ 16,326 (1983); *See also Clive Construction Co.*, ASBCA No. 28600, 84-3 BCA (CCH) ¶ 17,594 (1984) (finding that the contractor was unable to recover on its delay claim due to inaccurate contract drawings when Government showed that contractor was prevented from working due to the failure of a supplier to timely deliver materials.

³⁷ *Morganti Nat., Inc. v. United States*, 49 Fed.Cl. 110 (2001).

The existence of a concurrent delay is frequently a defense to a compensable delay claim. When a contractor asserts a delay claim, the owner attempts to establish the existence of a concurrent non-compensable delay caused by the contractor. Likewise, when an owner asserts a claim for liquidated or actual delay damages, the contractor will attempt to establish the existence of a concurrent excusable delay. Thus, when projects are concurrently delayed by the owner and the contractor the delays are excusable and non-excusable, respectively, and neither party will be allowed recovery from the other. *J. A. Jones Construction Co. v. Greenbriar Shopping Center*³⁸ is instructive on this point. The court in *J. A. Jones* found that “undoubtedly” the contractor and the owner both caused delays in completing the project. It also found that under the circumstances it was impossible to allocate responsibility for the delays. The court, therefore, rejected each party’s delay claim.

Damages are recoverable when courts are able to apportion liability for the delay between the parties.³⁹ “In cases of concurrent delay, where both parties contributed significantly to the delay period by separate and distinct actions, justice requires that the cost of the delay be allocated between the two parties proportionately.”⁴⁰ Thus, in disputes regarding concurrent delays, a contractor cannot recover unless its delay is shown to be separate from that caused by the owner.⁴¹

In *Tyger Construction*, both parties contributed to the delay. The contractor was responsible for additional contract time required to remedy certain aspects of the work. The Government was responsible for additional contract time for its failure to take reasonable steps in

³⁸ 332 F.Supp. 1336 (ND. Ga. 1971).

³⁹ See *Blinderman Construction Co., Inc. v. United States*, 695 F.2d 552 (Fed. Cir. 1982) (quoting *Coath & Goss, Inc. v. United States*, 101 Ct. Cl. 702 (1944), stating “neither [party] can recover damage, unless there is in the proof a clear apportionment of the delay and the expense attributable to each party.”).

⁴⁰ *Tyger Construction co., Inc. v. United States*, 31 Fed.Cl. 177 (1994).

⁴¹ See *Id.* (citing *William F. Klingensmith, Inc. v. United States*, 731 F.2d 805 (Fed. Cir. 1984)).

investigating and solving certain design defects. Following precedent in *Fischbach & Moore Int'l Corp.*,⁴² the court stated that, “if the delays can be segregated, responsibility can be allocated between the parties.” After a detailed review of expert testimony concerning the cause of the delay, the court found that the contractor was 40% responsible and the owner was 60% responsible for the delay period. The court, therefore, apportioned the delay damages “according to the parties’ contribution to the delay.”⁴³

E. *Compensable vs. Non-compensable Delay*

As discussed above, excusable delays are either compensable or non-compensable. Similar to the analysis in determining whether a delay is excusable or non-excusable, an analysis must be made of the event causing the delay to determine whether the excusable delay is compensable or non-compensable.

An excusable delay which entitles the contractor to be reimbursed for costs incurred and damages sustained as a result of the delay is considered *compensable*. If an excusable delay is within the control of the owner, or its agents, including the architect, engineer, construction manager, or another prime contractor, the delay may be compensable. Compensable delays include delays for errors and omissions, change orders, differing site conditions, suspension of work, untimely approvals, late owner-furnished items or failure to provide access to the site. These delay-causing events, however, are not always compensable. Certain contracts contain a “no damage for delay” clause, which may limit the contractor’s remedy for delay to a time extension only. An expansive “no damages for delay” clause would read:

Notwithstanding anything to the contrary in the Contract Documents, an extension of the Contract Time, to the extent permitted by the Contract Documents, shall be the sole remedy of the Contractor for any (1) delay in the commencement, prosecution, or completion of the Work; (2) hindrance or

⁴² ASBCA No. 18146, 77-1 BCA ¶ 12,300, at 59,224 (1976).

⁴³ *Tyger Construction*, *supra* at note 40.

obstruction in the performance of the Work; (3) loss of productivity or acceleration; or (4) other similar claims (collectively referred to as Delays) whether or not such Delays are foreseeable, unless a Delay is caused by the Owner's active interference with the Contractor's performance of the Work, and only to the extent such acts continue after the Contractor furnishes the Owner with notice of such interference. In no event shall the Contractor be entitled to any compensation or recovery of any damages in connection with any Delay, including, without limitation, consequential damages, lost opportunity costs, impact damages, or other similar remuneration. The Owner's exercise of any of its rights or remedies under the Contract Documents (including, without limitation, ordering changes in the Work, or directing suspension, rescheduling, or correction of the Work), regardless of the extent or frequency of the Owner's exercise of such rights or remedies, shall not be construed as active interference with the Contractor's performance of the Work.

Despite the harsh consequences of “no damage for delay” clauses, they generally are recognized to be valid, with certain exceptions depending upon where and how the clauses are used. Some jurisdictions prohibit such clauses on public contracts for policy reasons.⁴⁴ Other exceptions are predicated upon the contractually implied promise and obligation not to hinder or impede performance. Thus, in most jurisdictions, “no damage for delay” clauses will not be enforceable when delays result from a party’s fraud, concealment or active interference with performance of the contract.⁴⁵

Absent a contract with a “no damage for delay” provision, certain excusable delays still may not be compensated. An excusable delay for which the contractor is entitled to a time extension, but is precluded from reimbursement for costs incurred during the extended time period, is considered *non-compensable*. Non-compensable delays are unforeseen and beyond the control of either party and include *force majeure* delays. Concurrent delays are also excusable and non-compensable such that neither party is able to collect for delay-related damages. Regardless of whether the delay is compensable or non-compensable, the contractor is entitled to

⁴⁴ See *Blake Construction Co., Inc. and Poole and Kent Corp v. Upper Occoquan Sewage Authority*, 587 S.E.2d 711 (Va. 2003).

⁴⁵ See *United States for the Use & Benefit of Seminole Sheet Metal Co. v. SCI Inc.*, 828 F.2d 671 (11th Cir. 1987).

an extension of time (i.e., an increase in the contract time) to complete the work; therefore, no liquidated damages can be assessed to the contractor during the extended time period. At the same time, the contractor is not compensated for its expenses during the extended period or its damages due to the delay.

Further, for a delay to be compensable, not only must it be excusable (i.e., caused by the owner's actions or inactions), but also it must occur on the critical path of construction.⁴⁶ As discussed above, recovery on delay claims requires a showing that the alleged delay affected the critical path, extending it beyond the contract time. Thus, a compensable delay is limited to the amount of time the critical path is actually extended.⁴⁷

IV. Adjustments During Performance

During the course of a project, the schedule is updated to reflect progress, historical performance, actual events, and changes in plan or sequence. These updates invariably change the critical path, float, and plan for the remaining work. Schedule revisions should be acknowledged early by all parties involved. As the schedule is adjusted, the owner should be made aware of work-arounds and associated costs. Impacts and delays may require major schedule adjustments to meet the completion date. If properly maintained, the schedule is an essential tool that can be used to evaluate where the project is and how to get back on course.

A. Reasonableness of Schedule

In order to use the schedule as a tool to measure progress and recover time it must be reasonable and accurate. The schedule needs to model the project, with the full scope of work being represented. The schedule logic and constraints between schedule activities must be

⁴⁶ See *Broome Construction, Inc. v. United States*, 203 Ct.Cl. 521 (1974).

⁴⁷ See e.g., *Ealahan Electric Co.*, DOTBCA No. 1959, 90-3 BCA ¶ 23,117 (1990); *Fletcher & Sons, Inc.*, VABCA No. 2502, 88-2 BCA ¶ 20,677 (1988).

reasonable and consistent with industry practice and current construction market conditions. Float must be reasonably apportioned, and durations need to be achievable with the available resources. Weather-sensitive activities must be properly restrained. For multiple prime projects, all primes must buy in to the schedule.

1. Accuracy of Schedule Updates (Failure to Maintain)

Failure to update properly can lead to false projections for completion and false identification of critical and near-critical activities. Schedule updates must accurately reflect the manner in which the work is being performed. Major logic revisions must be reflected in the update. The progress of the work activities needs to be stated accurately and as-built dates recorded. Failure to maintain updates will result in a schedule which does not reflect the progress of the work thus becoming an ineffective management tool.

Logic must be revised for work-arounds and minor coordination issues. Allowing nearly completed activities to drive successor activities when the follow-on work has already proceeded will result in inaccurate projections. Progress must be updated and remaining work rescheduled on each update. Updates should accurately reflect the remaining progress of work to and provide a look-ahead forecast to determine where resources will be most effective.

- B. *Recovery Schedules*

If a project is significantly behind schedule, the contractor may elect or be directed by the owner to develop a recovery schedule. A recovery schedule is a schedule that depicts actions and special efforts required to recover lost time in the baseline schedule. The schedule may be a modification of the logic and durations in the baseline schedule to reduce the overall time to completion, or it may be the development of a new schedule to complete the remaining work within a reduced amount of time. The advantage to modifying the baseline schedule is that it is

easy to track what changes have been made and measure performance and acceleration against the baseline schedule, all definite advantages in a forensic analysis. Development of a new recovery schedule breaks the paradigm hold and creates a completion schedule from scratch. Comparisons with the baseline become more difficult with a new schedule because activity descriptions and identification codes may change.

Recovery schedules, although aggressive, must be achievable. Critical and near-critical activities and float paths need to be reasonable for the schedule to be achievable. A high percentage of critical and near-critical activities reduces the probability of achieving the schedule recovery. Logic sequences, work flow, and durations must be reasonable, based on the physical requirements of completing precedent work, the available labor resources, and work space congestion. Major trade contractors should be involved in recovery schedule development.

Resource availability must be considered. Union rules, where applicable apply differently for different trades, which affects the economics of what a contractor may do. Extended hours, work days, or additional shifts may require scheduling trades on different calendars. Work activities for different trades may be scheduled using different calendars depending on work week or seasonal considerations. The addition of multiple calendars in a schedule changes the critical path. The longest path through the schedule may be driven by the work calendar and not the least amount of float. Advanced scheduling software packages calculate the “longest path” through the schedule, taking into consideration work activities on multiple calendars.

C. *Work Acceleration*

Acceleration is the expedition of the progress of the work in order to complete earlier than scheduled, or to recover time lost due to project delays. As a result, the remaining period of

performance is shortened or compressed as compared to the time planned to perform that work. The acceleration of the work is usually achieved through adding resources to the project, such as labor and supervision or equipment, working overtime hours, re-sequencing the work, or expediting material or equipment.

Documenting acceleration of work can be achieved in a number of ways. The work activities may be re-sequenced in the schedule in a manner to reduce overall time. In some instances, activities which are scheduled in series may be overlapped by allowing follow-on work to proceed when a portion of the preceding work is complete, thereby reducing the overall time. The addition of temporary protection, such as building enclosure, may also allow interior weather-sensitive work to proceed earlier than planned.

The period of time to perform the work may also be reduced by adding labor resources to the project. In some cases, this takes the form of a second or third shift. The addition of labor or work crews will allow the duration of individual work activities or groups of activities to be completed in less time. Additional labor crews will also allow work to be performed in multiple areas at the same time, thereby decreasing overall duration. In addition, the overall number of calendar days to complete a project may be reduced by scheduling overtime through longer days or extended work weeks.

Finally, if the procurement of equipment or material is on the critical path of a project, expediting costs may be paid to accelerate delivery.

D. *Issues Associated with Multiple Schedules*

On some projects which have suffered significant delay, the owner may demand that the contractor produce an “acceleration” schedule to meet the mandated completion date. This recovery schedule may carry significant risk by causing a high percentage of the activities to

become critical or near-critical and might be characterized as being an aggressive schedule. The contractor may find it difficult or impossible to meet the demands of an aggressive recovery schedule and will incur significant costs in attempting to recover time. This acceleration schedule may have additional costs not included in the bid, such as overtime premium costs, labor inefficiency, material expediting costs, and additional supervision. More often than not, the probability of meeting an aggressive recovery schedule as the work progresses may be relatively low. As the schedule is updated, work is either accelerated further or the end date slips. When this occurs, this is a good time for both parties to revisit the acceleration schedule and determine what is cost effective before making further efforts at accelerating.

One strategy for the contractor in this situation, if the contractor feels it is entitled to a time extension, is to maintain a second schedule based on the contractor's original plan with reasonable mitigation efforts. This second schedule would not recover all of the time mandated by the owner. A reasonable mitigation schedule would record delays and recovery of time as work progresses. The second schedule thus becomes a tool to document and prove delay/acceleration claims.

If the two schedules are updated and maintained contemporaneously, the schedules would tend to converge; that is, the acceleration or recovery schedule tends to slip as the reasonable schedule maintains or slightly improves. Conversely, if the acceleration or recovery schedule recovers time, the improvement in progress will be reflected in the update of the reasonable schedule. The as-built progress, reflecting actual dates, is similar on both schedules. The difference between the two schedules reflects the time extension to which the contractor is reasonably entitled at any point in time. Using two schedules may be the road to successful claim resolution.

V. Delay and Disruption Claims

Claims for delay may arise when the work slows down and lags behind the original or as-planned project schedule or when the contractor has to speed up (accelerate) the work to get back on schedule. The contractor may seek compensation for time-related costs caused by the extended time of performance. In order to recover time-related damages, liability of the other party for the delay must be demonstrated. That is, the contractor must prove entitlement. Owners may also assert delay claims seeking liquidated or actual damages to compensate them for the delay. Contractors, on the other hand, assert claims for compensation connected with the substantial increases in the cost of construction. Compensation for delay claims may not be limited by either party's direct damages. Parties should be cognizant of any consequential damages that may flow from the delay, unless the parties have mutually agreed by contract to waive such claims.

A. *Delay Claims*

When a project is delayed through no fault of the contractor, the contractor either will need additional time or it will be forced to accelerate construction to meet the as-contemplated completion date. More time means more money, and acceleration means overtime pay, additional equipment, and possibly labor inefficiency. Under these circumstances, the contractor incurs substantial costs. Thus, delay claims generally include claims for extended time of performance and acceleration.

Delay claims also arise when the owner directs⁴⁸ the contractor to suspend the work. Suspension of work involves the temporary stoppage of work on all or a portion of the project.

⁴⁸ Suspension in the work also can be ordered by a Federal or State governing authority with jurisdiction over the project. In such case, the reason for the suspension will determine whether the contractor or the owner will be responsible for the delay claim.

Contractor claims arise here due to costs associated with demobilization, remobilization, storage of the work, and extended rental costs. Although a suspension of the work results from an owner's tactical necessity to adjust the project parameters, suspension also can arise due to changes to the work, slow responses to requests for clarification, design errors or omissions, unforeseen site conditions, strikes, or financial difficulties delaying payment. If a suspension of work affects the critical path, and thereby the completion of the project, the owner may be liable for delay-related costs. In order to perfect its right to the delay claim, the contractor should properly serve notice on the owner for the delay, despite the fact that it was the owner who suspended the work.⁴⁹

Perhaps the most common delay claim is the claim for extended time of performance. However, a contractor may also make a claim for delay even when the contractor completes the work within the original contract time. "A contractor who is capable of finishing a job earlier than was contemplated by contract is entitled to delay damages if the owner's interference slows the contractor's performance."⁵⁰ Contractors are entitled to execute the work free from interference. In *Grow Construction v. State of New York*,⁵¹ the contractor's performance was delayed by misleading bidding information and defective drawings, both of which were supplied by the state. The contractor nevertheless completed the job well *before* the contract completion date. When the contractor sued for delay damages, the state defended on the grounds that there could be no recovery for increased costs due to delay because the project was completed and accepted within the contract time. This argument, however, was rejected by the court and the contractor recovered its delay damages.

⁴⁹ See *infra* § I.E.

⁵⁰ *Sun Shipbuilding & Dry Dock co. v. United States Lines, Inc.*, 439 F.Supp. 671 (E.D. Pa. 1977).

Courts may make a distinction between damages associated with delay and those associated with acceleration. A contractor may be forced to accelerate to meet the project completion date when the owner refuses to grant a time extension for owner-caused delays. In that case, a contractor may be entitled to acceleration costs, such as premium costs for overtime, inefficiency, and additional supervision, without incurring delay costs, such as extended general conditions. The distinction between delay and acceleration is particularly important when the contract includes a “no damage for delay” clause.⁵¹ In *Contracting & Material Co. v. City of Chicago*, there was no issue with respect to “fault or justifiability” of the project delays. The issue for the court was whether the application of the contractual “no damage for delay” clause would bar the contractor’s claim for additional costs. In its analysis, the court had to distinguish delay damages from acceleration damages because the contract at issue did not bar claims resulting from acceleration. The court noted that delay costs are associated with maintaining the field office, holding equipment on site, keeping salaried supervisors on the payroll, and incurring increases in wages and prices. Acceleration costs, on the other hand, are associated with working overtime or double shifts, and adding equipment to the job that otherwise would not have been needed. In this case, the contractor had not sought recovery of “delay” related damages and the *City of Chicago* court held that the contractor’s claim was not barred by the “no damage for delay” clause. Therefore, as a practice point, when making delay-related claims in the face of such clauses, parties should be mindful of the distinction between delay and acceleration and characterize the damages accordingly.

⁵¹ 391 NYS.2d 726 (App. Div. 1977).

⁵² 349 N.E.2d 389 (Ill. 1976).

1. Time Impact Analysis

As previously discussed, the baseline schedule and properly maintained schedule updates are essential to evaluating and presenting delay claims. One acceptable method for calculating the extent of delay on a project is the Time Impact Analysis. Time Impact Analysis (TIA) is an analytical scheduling technique that can be utilized to determine the schedule impact of delay-causing events on overall contract completion. This methodology utilizes slices in time or “status dates” to evaluate delay, allowing for an assessment of the work completed during the time interval between slices, as well as a forecast of the balance of work yet to complete. In other words, the delay to the project is measured by examining as-built progress along the critical path from the previous update (or slice in time) and changes to the critical path forecasted as of the status date.

The TIA methodology utilizes the baseline schedule, contemporaneous schedule updates, as well as project records that document changes or other delaying events, and the as-built progress of the work. Starting with the baseline schedule and working chronologically to the as-built schedule, this process allows for the determination and assessment of specific delaying events in the context of the project at the time the events occurred. This technique, along with analysis of salient issues of the project, also allows for the apportionment of delay responsibility in terms of contractor-caused (non-excusable), owner-caused (excusable), concurrent or *force majeure* events. A simplified example of a Time Impact Analysis to demonstrate the impact of a foundation delay is shown below in **Figure 5**.

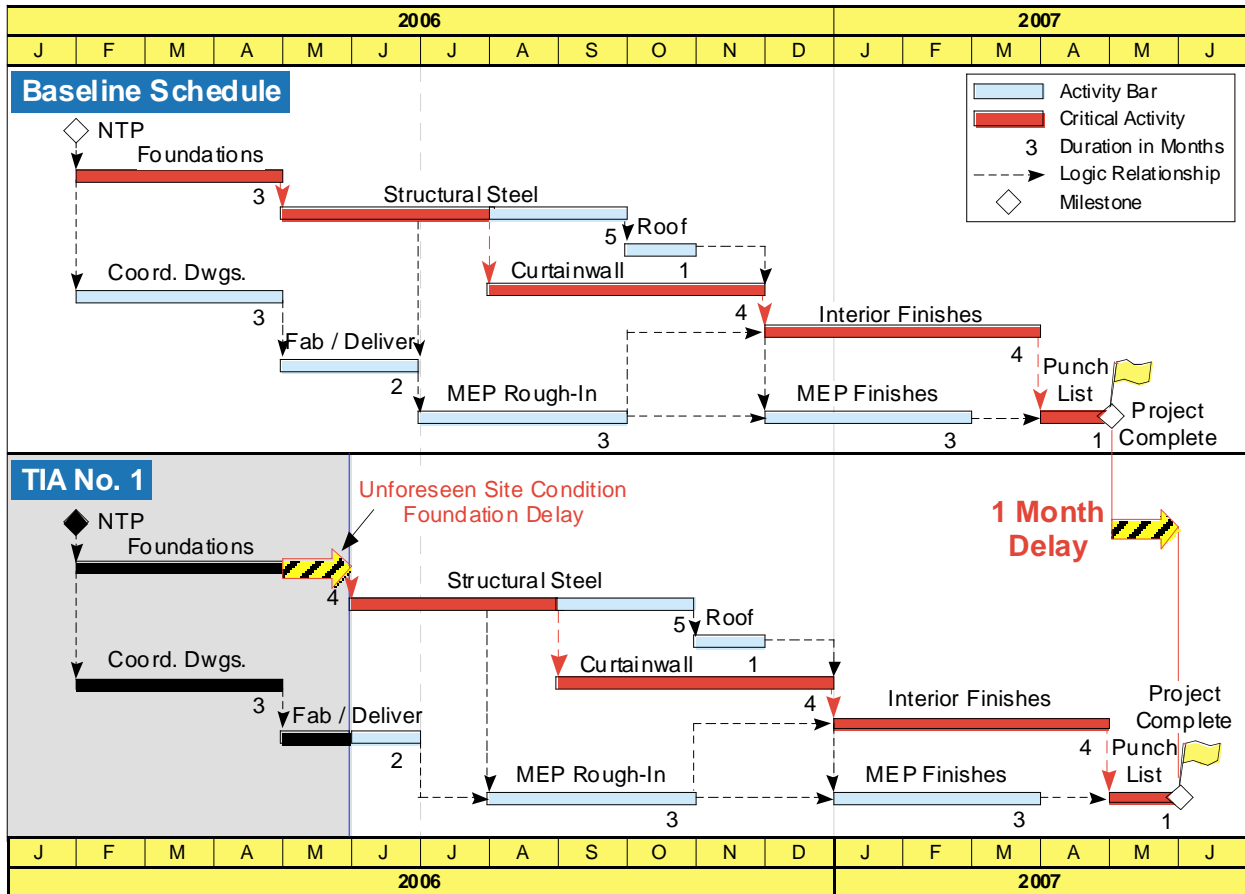


Figure 5 – Time Impact Analysis

One advantage of the TIA methodology is that it considers contemporaneous changes to the project critical path and the effect of re-planning or other schedule adjustments on project milestones or completion. By modeling the project history at appropriate successive intervals, the TIA process allows for the assessment of project delay in a manner approximating the situation that existed when the issues/delaying events arose. It provides a means to pinpoint, isolate and quantify delay periods.

B. Disruption and Inefficiency Claims

Disruption is defined as interference with the planned sequence or flow of work resulting in increased labor and equipment costs to perform the same work. Disruption results in loss of efficiency, which occurs when the workers do not meet the estimated or expected productivity.

Disruption may not involve actual work stoppage, but is frequently intertwined with delay and acceleration claims. A contractor must prove its “quantum,” that is, its damages for a disruption and inefficiency claim, with reasonable certainty.⁵³ In *J & K Plumbing and Heating v. State*, the state acknowledged liability for additional costs resulting from inefficiencies due to the need to perform additional work within the contract time. The contractor, however, was denied its damages. At trial, the contractor’s expert calculated the damages by simply taking thirty percent of the total labor cost. The court held that this method of determining damages was “wholly speculative.” Therefore, a detailed analysis of how damages are determined is required for recovery.

Damages for inefficiency/loss of productivity claims are essentially the difference between what it would have cost without the disruption and what it cost with the disruption. The difficulty is in isolating the costs which are beyond the control of the contractor. While courts and administrative boards have indicated that loss of productivity need not be traced to specific causes of increased performance costs, too often a loss of productivity claim is just a total cost claim for labor overruns. Claims often fail to demonstrate the causal relationship between the causes and the expended costs, resulting in denial based on a lack of proof of damages.

1. Measured Mile

An effective way to prove loss of productivity damages is to compare a non-impacted period on the actual project in question with an impacted period on the project. This methodology has been termed a “measured mile.” Using a model based on the actual performance data from the project at issue demonstrates what the contractor was able to achieve under the existing conditions at the specific project site with the existing management team.

⁵³ See *J&K Plumbing & Heating v. State*, 652 N.Y.S.2d 369 (App.Div. 1997).

This approach eliminates the bid estimate as a factor since the baseline to measure performance is the contractor's actual performance during the non-impacted period. A contractor can compare productivity achieved during the non-impacted period with productivity from a period impacted or disrupted to measure loss of productivity. However, even if a non-impacted period can be found, the impacted period needs to be free of contractor-caused problems.

The difficulty with the measured mile approach is the ability to find data for similar work effort during the non-impacted and impacted periods. The more similar the work content and the more specific the data regarding work and trades, the more accurate the method. If specific productivity data is not available, an earned value measured mile may be used. An earned value measured mile utilizes the progress payments or percent completion to determine earned hours. The earned hours are then compared to actual labor hours during a specific period.

What happens, however, when there are very few periods of non-impacted time on the project? For example, coming out of the ground on the condominium project, unforeseen underground soils conditions result in a delay to the contractor's schedule, which delay is not favorably considered by the owner until several months pass on the project and a formal time extension granted. During the period of delay without a time extension, the contractor was accelerated. So, none of the period of time from the beginning of the project until the granting of formal time extension can be considered a non-impacted period. Shortly after the owner issued a change order for the time extension and accelerated cost, in fact, in the author's experience in an actual case, within eight days of the owner granting that time extension, the engineer issued a stop work order because he discovered design errors requiring a redesign, the design was not made available for several weeks, and the owner refused to grant a time extension because he feared claims under the Interstate Land Sales Act. Thus, from the time the stop work order was

issued until final completion of the project, the contractor was in another acceleration period. Thus, the “non-impacted” period of a two-year project was a grand total of eight days.

Another method to determine loss of productivity is a comparison to similar projects. Contractors often keep historical productivity data to track labor productivity from past projects. This data can be used as the model for comparison to the impacted project, but is generally considered less reliable than a measured mile from within the project. While this method demonstrates the contractor’s experience on similar projects, it still does not demonstrate what the contractor could have achieved on the project site at issue. As such, when comparing to other projects, the reasonableness of the bid cannot be ignored. In addition, even if the bid was determined to be reasonable or a baseline for productivity for the different projects could be established, one cannot separate out other potential causes of lost productivity.

If data for project comparison studies are not available, another method is to utilize various industry standards and publications to evaluate labor productivity under numerous conditions. These standards may be used as a model to compare productivity on the impacted project. The weakness of this approach is that there is no way to demonstrate the performance of the particular contractor’s experience, thereby raising even more questions than the comparison to similar projects discussed above. As a result, the reasonableness of the bid cannot be determined and one cannot separate out other potential causes of lost productivity.

These issues can arise even when there is no one single delay-causing event. Frequently, claims are being made on projects for the “cumulative impact” of multiple changes to a project. Owners will often pay the “brick and mortar” cost of changes, without paying for what the contractor believes are the cumulative impact of these changes on the disruption of work productivity and increased indirect cost of work already under contract. Owners often take

the view that contractors file such claims as a last ditch effort to recover their total costs on a project, notwithstanding the contractual agreements already addressing compensation. Owners believe contractors should be able to incorporate into each change order the total and complete cost impact of the change to the contract amount and schedule. Contractors, and their attorneys, know otherwise. Cumulative impact claims typically arise on the largest and most complex projects, where there are numerous change orders, requests for information (RFIs), architect supplemental instructions (ASIs), constructive change directives (CCDs) or other events changing the base contract. Attorneys often pay attention to only the existence of excessive changes, but not their causation or cumulative impact to work outside of those changes. This can be fatal to a claim for cumulative impact as demonstrated by an Armed Services Board of Contract Appeals decision in *Appeal of Ingalls Shipbuilding Division, Litton Systems, Inc.*,⁵⁴ In *Ingalls*, the Board allowed a cumulative impact claim where three contracts affected by several thousand change orders resulted in a 58% increase in contract price and a four-year delay, as contrasted with *Pitman Construction Co.*,⁵⁵ where the increase in the contract price was 12% and the extension was 102 days on a 1,000 day original performance schedule. In *Pitman* the Board held that there was “no fundamental change in the character of the work...and thus no cost had been experienced whose likelihood had not been foreseeable.”⁵⁶ These cases demonstrate that there is no single widely accepted “bright line” definition of a cumulative impact, or what specific elements must exist to trigger recovery under that theory. There are a wide variety of definitions and descriptions in the case law. The most common definition of a cumulative impact is the existence of multiple changes on a project which, acting in sequence or concurrently, cause an increase in project cost, disruption to project sequences, and extension to

⁵⁴ 1978 W.L. 2301 (ASBCA), 78-1 BCAP 13,038, A.S.B.C.A. No. 17,579 (ASBCA, February 17, 1978).

⁵⁵ GSBCA Nos. 4897, 4923, 81-1 BCA, 73,297, 2 CL. Ct. 211, 30 Construction Case Fed. (CCH) ¶ 70,991 (1983).

the project schedule.⁵⁷ The compounding effect of changes to project conditions causing work on one activity to be adversely affected by changes, additions or work on another activity, or multiple activities, is also known as the “ripple effect.” The theory behind a cumulative impact claim is that the contractor cannot price or even determine the compounding effect of all changes when pricing changes individually or negotiating compensation for those direct changes. If the contractor cannot quantify the ripple effect in time or money, the contractor is obtaining less than full compensation for the change order. A reference to the *Pittman* case provides support for this theory. Pittman, the contractor, claimed for the ripple effect of the delays and disruptions to a Federal office building, courthouse and parking facility, resulting from 206 contract changes on the project. The board accepted Pittman’s distinction between the “direct impact” claim for labor, material and normal mark-ups, and the “cumulative impact” claim for indirect cost resulting from changes in work sequence, delays, disruptions, re-scheduling, re-sequencing, extended overhead, acceleration and impact costs.⁵⁸ The board accepted the term “ripple effect,” used by Pittman to describe such impact costs. Ironically, the board ultimately granted the Government summary judgment on the cumulative impact claims, which was upheld by the claims court, which found that Pittman deviated from the planned construction sequence and, therefore, also contributed to the delay. Thus, since there was a “concurrent delay,” the board found that the delay was non-compensable. The case is cited, however, as the first to recognize the concept of an indirect impact claim to other work under the contract resulting from change order work. Another case recognizing cumulative impact costs as those costs resulting from an unanticipated loss of efficiency and productivity, which increases the contractor’s performance

⁵⁶ *Id.*

⁵⁷ Hester, Kuprenas & Chank, “Construction Changes and Change Orders: Their Magnitude and Impact,” Construction Industry Institute, Source Document 66, at p.35, October, 1991.

⁵⁸ *Pittman*, *supra* at note 55.

cost and usually extends its stay on the job, is *Haas & Haynie Corporation*.⁵⁹ This case was the first to refer to a compensable impact as a “constructive change.”⁶⁰ Unquestionably, a study of the case law finds that in order to be successful on a “cumulative impact” claim, the level of changes must be excessive, unforeseen, and causal in combination, to adversely impact other work outside the scope of the negotiated changes or work. As a practitioner’s point, lawyers must be careful not to fall into the trap of having to prove a “cardinal change” to the contract to establish a cumulative change.

A cardinal change is defined as contract changes which serve to “materially alter the nature of the bargain originally agreed upon.”⁶¹ A cardinal change requirement to prove a cumulative impact claim would drastically increase the burden of proof because, as defined by the United States Court of Federal Claims, a cardinal change occurs when there is an alteration in the work so drastic that it effectively requires the contractor to perform duties materially different from those originally bargained for.⁶² In effect, a cardinal change is “so profound that it is not redressable under the contract.”⁶³ Unfortunately, the *Pittman* Court characterized cumulative impact in terms of a cardinal change, which is, in our opinion, a mistake in terminology, but several cases have concluded that cumulative impact and disruption claims are “analogous” to cardinal change, implying that a cardinal change must be proved in order to prove a cumulative impact claim.⁶⁴ As a practitioner’s tip, it is the contractor’s job to offer affirmative proof of causation between the change orders or cost increases and the loss of productivity and

⁵⁹ GSBICA Nos. 5330, 6224, 6638, 6919, 6920, 84-2 BCA ¶ 17,446.

⁶⁰ *Id.*

⁶¹ See *Coates Industrial Piping, Incl*, VABCA No. 5412, 99-B.C.A. at ¶ 150,584.

⁶² See for e.g., *PCL Construction Services, Inc. v. United States*, 47 Fed. Cl. 745 (2000); *AT&T Communications, Inc. v. Wilter, Inc.*, 1 F.3d 1201 (Fed. Cir. 1993).

⁶³ *Atlantic Dry Dock Corp v. United States*, 773 F.Supp. 335, 339 (M.D. Fla. 1991).

⁶⁴ *Southwest Marine, Inc.*, DOTBCA No. 1663, 94-3 BCA ¶27,102; *Coates Industrial Piping, Inc., Id.* at ¶ 150,584.

impact. A mere showing of the number of changes on the project is not going to be sufficient. For example, in *Centex Bateson Construction Co.*,⁶⁵ the contractor was unable to recover on its multi-million dollar claim based on 1,561 change events on the project, which included change orders, constructive changes, and requests for information, which the board rejected because the contractor had failed to demonstrate that the changes had caused the loss of productivity on unchanged work.

The use of scheduling techniques can be critical in proving a cumulative impact claim. For example, fragnets can be used to identify the effects of changes on other work in the same area where changes are made; or the effects of changes on other work to be performed by the same work force or equipment required for changes; or to identify schedule sequences that must be disrupted to accommodate changes; or identify sequential activities that must be performed concurrently due to delays or acceleration arising from changes. Resource loaded schedules can be used to identify changes that shift work into a more adverse construction season, or identify impacts of changes on availability of work force, crew size, learning curve, equipment and material availability, just to name a few. As a practitioner's point, lawyers pursuing a cumulative disruption claim should not emphasize liability and damages at the expense of causation.

Although there are several methods of calculating damages for cumulative impact and delay claims in general, a lost productivity claim is usually premised upon the increased cost of performing original work scope when it cannot be performed within planned efficiencies. Methods approved to prove damages include the total cost, modified total cost, comparisons to work on the same job, comparisons to work by the contractor on a different job, productivity studies, expert opinion, and historical comparisons. Most disfavored is the total cost method,

⁶⁵ 99-1 BCA ¶ 30,153.

where the estimated or contract price of performance is subtracted from the actual cost of performing the project. Overhead and profit are then added to that figure, and the “total” damages are claimed. Most courts disfavor this method if there is another method available to calculate damages.⁶⁶ The modified total cost method, whereby the total cost claim is “adjusted for any deficiencies in the plaintiff’s proof in satisfying the requirement of the total cost method,” is more favored.⁶⁷ The contractor’s recognition of its own contribution to increased cost and lost productivity, subtracted from its total cost, provides a realistic validation to the contractor’s claim. Thus, the modified total cost method compares the actual costs incurred to the bid amount and makes adjustments for possible bid errors and contractor inefficiencies or problems. While this method is an improvement over the total cost method, it remains difficult to establish the causal link between the presence of multiple changes and the indirect cumulative impact costs incurred.

While courts and administrative boards have indicated that loss of productivity claims need not be traced to specific causes of increased performance costs, too often a loss of productivity claim is presented as a total cost claim for labor overruns. Thus, such claims often fail to demonstrate a sufficient causal relationship between the causes and the expended costs, resulting in denial based on a lack of proof of damages. The measured mile, when carefully applied, is an effective way to demonstrate a loss of productivity claim by comparing a non-impacted period on the actual project in question with an impacted period on the project. This approach can eliminate the bid estimate as a variable factor, and isolate the productivity losses due to those impacts arising from conditions beyond the claimant’s control.

⁶⁶ *Stein, Construction Law*, Volume No. 2, ¶ 11.03[2] at 11-34 (2001).

⁶⁷ *Neal & Co., Inc. v. United States* 36 Fed. Cl. 600 (1996).

VI. Acceleration (Actual vs. Constructive) Claims

In terms of project scheduling, the opposite of delay is acceleration. As noted above, acceleration occurs when the contractor “speeds up the work so that it is performing the job at a faster rate than prescribed in the original contract.”⁶⁸ There are two forms of acceleration, actual and constructive. Whether a contractor makes a claim for either form depends upon the reasons for acceleration. Actual acceleration occurs when a project experiences delay and the owner *directs* the contractor to recover the time. Sometimes an owner will direct acceleration and pay for the premium time, but refuse to provide compensation for inefficiencies. Directed acceleration also may occur if an owner desires occupancy earlier than required by the contract or requires an intermediate milestone to be completed earlier than mandated by contract. Constructive acceleration occurs when an excusable delay has occurred on a project, but a time extension has been refused by the owner. If the owner has not extended the project completion for justifiable delays, the contractor may need to accelerate and *recover* contract time to avoid liquidated or actual delay damages.⁶⁹ The costs associated with this acceleration may be recoverable if the contractor demonstrates that (1) it was entitled to an extension of contract time; (2) an extension was requested in a timely manner; (3) the owner impliedly directed acceleration or refused to grant the extension; and (4) the contractor incurred additional costs in its efforts to avoid liquidated or other damages.

Costs associated with acceleration or recovery of contract time may be sought from the party that caused the delay. Because the addition of labor is a key component of acceleration,

⁶⁸ See *City of Chicago*, *supra* at note 52.

⁶⁹ *Norair Engineering Corp. v. United States*, 229 Ct. Cl. 160 (1981) (noting that while the normal constructive acceleration scenario is that the contractor experiences delays but is required to be completed by the original date, completion on time is not a required element of an acceleration claim; “a contractor who finishes the project with the contract time plus excusable delays is not disqualified as a matter of law from claiming acceleration costs.”).

the potential impact on labor inefficiency is a major concern when accelerating. Labor inefficiency may result from sequence changes, stacking of trades, overcrowding, and extended overtime. Additional costs beyond those associated with losses in labor efficiency may also include the premium pay associated with overtime or second-shift work, and costs associated with accelerated delivery and storing of materials.

Actual or constructive acceleration may not be compensable when acceleration is required due to “normal” or expected changes in the schedule.⁷⁰ As the court in *Blake Construction* noted, during the normal course of construction, there is an expectation that the schedule will experience some “disorder and constant readjustment.”⁷¹ Often during job coordination meetings contractors and subcontractors may be requested to modify or adjust certain “as-planned” work activities to coordinate with the actual performance of the work.⁷² Courts have held that acceleration claims are non-compensable when such acceleration was considered normal under the circumstances. In *Bat Masonry Co. v. Pike-Paschen Joint Venture III*, the court explained:

[T]here is a range of reasonably expected adverse conditions in the performance of a construction contract within which there is no breach. [A subcontractor] could expect a certain degree of work delay, trade stacking, worksite access problems and changes in the work sequence. It is only to the extent that [a contractor’s] lack of diligence as a general contractor caused those adverse conditions to move outside that “expected” range that [a subcontractor] is entitled to recovery.⁷³

Thus, when analyzing acceleration claims, one must determine whether the reason for acceleration was a result of “normal” or expected conditions or a result of more extreme conduct

⁷⁰ See *Blake Construction Co., Inc.*, *supra* at note 3.

⁷¹ *Id.*

⁷² *Bat Masonry Co. v. Pike-Paschen Joint Venture III*, 842 F. Supp. 174 (D. Md. 1993).

⁷³ *Id.*

evidencing that a contractor or subcontractor failed to act reasonably or diligently. In the former instance, acceleration claims may be denied.

Recovering on a constructive acceleration claim requires a showing that the owner impliedly gave the contractor an order to accelerate or the owner refused to grant a legitimate time extension. When recovery of time is required to maintain the projected completion date and the delay-causing event is outside the contractor's control, the owner has an obligation, in its contractually implied duty to cooperate, to recognize a request for additional time. An owner may be deemed to have impliedly ordered the contractor to accelerate when it has failed to rightfully extend contract time and has otherwise forced the contractor to adhere to the original contract completion date. For example, in *Norair Engineering Corp v. United States*,⁷⁴ the Government rejected certain requests for time extensions and sent letters to the contractor directing it take "positive action to expedite the work" and threatening the application of liquidated damages. The United States Court of Federal Claims held that this conduct amounted to an implied direction to accelerate the work. Similarly, in *City of Chicago*, the city denied requested extensions of time attributable to strike and city-ordered suspension and directed the contractor to "exert whatever efforts are required" to meet "the established completion date."⁷⁵ The court found that the city's pressure to maintain the original schedule, despite the occurrence of an excusable delay, was equivalent to an order to accelerate.⁷⁶

Contractors alike may be liable for failure to recognize legitimate requests for extensions of time. In one such instance, a court held that acceleration "occurred when delays entitling [the subcontractor] to a time extension under the contract were not recognized as such by [the

⁷⁴ *Norair, supra* at note 69.

⁷⁵ *City of Chicago, supra* at note 52.

⁷⁶ *Id.*

contractor], and time extension requests were denied by insistence on completion dates irrespective of such delays.”⁷⁷

VII. Dispute Resolution

Construction is inherently complicated and the complexity in evaluating the cause and effect of scheduling disputes makes resolving delay claims extremely difficult and expensive. Although delay and disruption disputes generally arise between two parties, the conduct and events precipitating the dispute may arise from a multiple number of entities that contributed to the construction process. Scheduling and prosecuting the work is an intricate process that requires the coordination of countless parts and services, which range from beams to baseboards and includes everything else in between. Moreover, since delay claims typically develop and fester over an extended period of time, they accumulate a tremendous amount of history and facts, which are needed as context to fully assess liability for delays. As a result, construction disputes become very technical and burdened by a deluge of documents, experts and opinions. Quite often “prevailing” parties are left with impractical net results because judges and juries are unable to process the size and complexity of construction disputes.⁷⁸ The construction industry, therefore, has pushed to find expeditious and cost effective alternative methods to litigation and arbitration for construction disputes.⁷⁹ The following, with the exception of declaratory judgment actions, are methods of alternative dispute resolution, or ADR, to consider whether the project has been completed or whether it is facing “mid-course adjustments.” Engaging in ADR may be voluntary or contractually required as a condition precedent to litigation or arbitration. The ADR methods discussed are generally non-binding and require the use of a neutral third party.

⁷⁷ *Natkin & Co. v. George A. Fuller Co.*, 347 F. Supp. 17 (W.D. Mo. 1972).

⁷⁸ *Thomas J. Kelleher, Jr., Construction Disputes: Practice Guide with Forms*, § 14.01 (2d ed. 2006).

A. *Early Neutral Evaluation*

Early Neutral Evaluation (ENE) is a little-used method of ADR. ENE may be thought of as a hybrid of mediation and non-binding arbitration, both of which are discussed below. ENE is a forum where the parties select an independent third person (the “neutral”), who will evaluate and offer an opinion on the substantive issues and the likely outcome of the lawsuit or arbitration, as the case may be. ENE may take place pre-or post-suit, and although ENE suggests this dispute resolution procedure should take place “early” on in the dispute, ENE may be an effective tool at any time prior to a dispositive motion or trial. The purpose of ENE is to provide the parties with a neutral opinion of the likelihood of success so that the parties may be in a better position to offer or accept settlement. Towards this end, ENE has been effective in providing a “reality check” for clients and lawyers before the parties commit to the significant costs of litigation.⁸⁰

In ENE, the neutral is one who has an expertise in the subject matter or construction type underlying the delay claim or construction dispute. In an informal setting, the neutral initially hears presentations from counsel, similar to a mediator. However, where a mediator is prohibited from going, the neutral evaluator is free to roam. The evaluator may take testimony from clients and/or witnesses with or without direct or cross examination, and without regard to the rules of evidence. The neutral also may ask questions of the parties or the witnesses, or may seek information from third parties or experts, if necessary, to sufficiently evaluate and explore the merits and legal position of the respective litigants. Through this process, the neutral clarifies and narrows the substantive issues and even identifies any areas of agreement. The neutral then prepares a written report offering his or her legal assessment of the dispute, the

⁷⁹ *Id.*

⁸⁰ *See* Alternate Dispute Resolution (ADR) Program at the United States District Court for the Northern District of

likely outcome, the likely assignment or apportionment of liability, and the potential dollar range of damages. The report also may include the neutral's evaluation of the relative strength and weakness of each party's position. Most importantly, though, in order to effectively facilitate a negotiated settlement the report should include sufficient reasoning supporting the evaluation and opinions. The neutral's evaluation is, of course, non-binding, and discussions held during the ENE process are confidential and thus inadmissible in later proceedings. The neutral evaluator may not report the content of his or her evaluation to a judge or arbitrator in binding arbitration without the agreement of all parties involved.⁸¹

Generally speaking, the neutral does not participate in the negotiations. The neutral "has no power to impose settlement and should not attempt to coerce a party to accept any proposed terms."⁸² Further, it is important to note that the ENE process does not have to resolve the entire dispute. ENE may be effective in resolving some of the parties' claims or issues prior to extensive (and expensive) litigation. To this end, ENE would be most effective prior to or during the early stages of litigation. However, there seems to be little reason why the ENE could not be an effective process to address delay-related issues such as whether or to what extent events may be deemed excusable as they arise.

B. *Pre-suit Mediation (Contractual or Agreed)*

Perhaps the most popular form of alternate dispute resolution, mediation, has sometimes been described as "assisted negotiation of a dispute settlement."⁸³ Mediation of disputes prior to filing a demand for arbitration or a lawsuit may be an obligation of the parties under their

California, at <http://www.adv.cand.uscourts.gov/adv/adrdocs.usf>.

⁸¹ *In re Prohibition Against Disclosing ENE Communications to Settlement Judges*, 2007 W.L. 1514643 (May 21, 2007 (finding that in the absence of a stipulation by all parties and the evaluation, disclosure of communications made in connections with ENE to a settlement judge is prohibited).

⁸² *See Supra* at note 80.

⁸³ JAY R. GREINIG, *ALTERNATIVE DISPUTE RESOLUTIONS*, § 4.1 (3d ed. 2007).

contract, or may be voluntarily agreed to when circumstances suggest that pre-suit mediation would be beneficial. Some jurisdictions, however, may require pre-suit mediation even if it is not contractually required.⁸⁴ Generally, the goal of mediation is to assess the strength and weakness of the parties' claims, to understand the potential consequences of pursuing more formal dispute resolution procedures, and work on settlement options.

In mediation, like the other forms of ADR discussed, a neutral third person listens to the competing claims. In this process, however, the neutral, or mediator, is not a decision maker. The mediator merely assists the parties to reach their own settlement; he or she typically does not offer opinions with respect to the merits of either party's factual or legal claims.⁸⁵ The benefits of pre-suit mediation are:

- The process is relatively inexpensive and often can be completed over a matter of days rather than in years, which is typical of litigation and arbitration;⁸⁶
- The claims discussed are not made public by the filing of a lawsuit and remain confidential;
- The parties control the process and decide the outcome, rather than giving up that control to a fact-finder who may not be experienced in construction matters and/or delay claims; and

⁸⁴ Many states have enacted legislation establishing pre-suit requirements for plaintiffs, but many such statutes have contained ambiguities and loopholes that whittled down their effectiveness. *See* Darin T. Allen, Construction Defects Litigation and the "Right to Cure" Revolution, CONSTR. BRIEFINGS, March 2006, at 3.

⁸⁵ In this form of ADR, "a good mediator typically does not offer an opinion on how the case should be settled. Doing so can lock a party into a position or compromise the mediator's impartiality, thus impairing settlement efforts." *Kelleher, supra* at § 14.04(D) (2d ed. 2006).

⁸⁶ The medium timeframe of a jury or bench trial in a construction case is 22.2 months. The medium timeframe to resolve an arbitration case from initiation to award is 11.2 months. Source: American Arbitration Association, "Construction Industry: Arbitration v. Litigation."

- The process gives each party the opportunity to hear generally their opponent's legal and factual claims or defenses in preparation for litigation in the event the dispute is not fully settled.

The last benefit could be viewed in the opposite light. There can be a disadvantage to pre-suit mediation if one party is not acting in good faith with the intent to settle. In this instance, while one party "shows its cards," the other party intentionally keeps its cards "close to the vest." Divulging one's factual basis for a claim or defense during mediation could be considered free discovery. Offering a candid disclosure of facts or legal theories in pre-suit mediation can also have tactical implications if the dispute does not settle.⁸⁷ To the extent pre-suit mediation reveals one's theory, theme or legal analysis, the opponent will have the advantage of preparing to specifically counter such theory, theme or legal position. The decision to divulge this information at mediation should be "weighed in light of both (1) the likelihood that these facts or theories will be revealed in any event, especially if discovery procedures will mandate disclosure, and (2) the importance of the element of surprise in trial or arbitration."⁸⁸

Pre-suit mediation is particularly appropriate in disputes in which the parties have a continuing relationship that they wish to preserve.⁸⁹ Pre-suit mediation, therefore, may be an effective tool of dispute resolution on large scale projects where construction has several months remaining and the parties' emotions are running high such that their ability to continue the ongoing relationship has been stifled. Breaking the emotional barriers of communication that have been erected during construction⁹⁰ is an added benefit of pre-suit mediation, especially where the parties want to minimize disruption to the schedule. Further, on larger projects,

⁸⁷ *Kelleher, supra* at § 14.03.

⁸⁸ *Id.*

⁸⁹ *GREINIG, supra* at note 83.

⁹⁰ *Id.* at § 4.2.

conducting mediation during the course of construction could provide a fertile opportunity to openly discuss creative solutions for complex problems and recovery of time in the schedule.

In theory, pre-suit mediation can be an excellent opportunity to settle a dispute before a costly and protracted lawsuit or arbitration ensues. In reality, however, conducting pre-suit mediation shortly after the dispute arises or the project is completed may not be the most opportune time for settlement. Typically in the early stages of a dispute, tempers are running hot and the “principle” of the dispute is overvalued compared to “principal” amount in dispute. As a result, claims will not be “ripe” as the parties will not have experienced the stresses and expenses of litigation or arbitration that make settlement an acceptable resolution.

Another concern with pre-suit mediation is that the parties quite often do not have the necessary information or documents from the opposing side to make an intelligent decision about whether or at what amount to settle. This is particularly true when delay claims are at issue and a thorough analysis of the “as planned” and various “as-built” schedules are needed to fully comprehend the claims. When a party does not have such information in advance of the mediation it generally cannot fully assess the risk in litigation. Of course parties are free to voluntarily exchange information prior to mediation, but this unfortunately does not usually happen.⁹¹ The irony is that both sides would benefit from the existence and reflection upon potentially adverse information, because such information could quell a plaintiff or foster a more reasonable settlement from a potential defendant.

Settlement and avoidance of a lawsuit is generally thought of as the objective of pre-suit mediation. Actual settlement at the end of pre-suit mediation, however, does not have to occur

⁹¹ Under Rule M-9 of the AAA Construction Industry Mediation Rules, parties are not required to produce information reasonably necessary to foster settlement until the first mediation session. Similarly, under Rule 4 of the CPR Mediation Procedures, a party requesting documents must have a “substantial need” for such documents and thereafter the parties must “attempt to agree” on an exchange.

for pre-suit mediation to be successful. Pre-suit mediation may be useful in simplifying the gathering of information needed to evaluate settlement options that the parties could consider subsequent to the mediation.⁹² Likewise, the process of pre-suit mediation may encourage the parties to take a run at possible resolution to see what happens and to determine what is needed in order to settle.⁹³ If on the other hand it becomes clear that settlement is not possible, pre-suit mediation could be a useful opportunity for the parties to agree upon a neutral expert to preside over an Early Neutral Evaluation or non-binding arbitration.

C. *Non-binding Arbitration*

Another method of ADR to avoid litigation is *non-binding* arbitration. Non-binding arbitration is procedurally similar to early neutral evaluation and mediation in that the parties present their arguments and evidence to a neutral, which may be one person or a panel of people agreed to by the parties. Selecting neutrals experienced in construction delay claims and construction law will make this process more valuable.

In non-binding arbitration, the neutral actually renders a decision, which is “advisory” only. The parties are not obligated to accept the non-binding decision, in which case the matter proceeds to trial as if the arbitration decision had not been made.⁹⁴ The parties also may use the non-binding advisory decision “as an aid to resolution of the dispute through negotiation or other [ADR] means.”⁹⁵ The parties, of course, may mutually agree to accept the “advisory” decision as binding and put the matter behind them. And, like the other forms of ADR, non-binding arbitration may be a condition precedent to litigation.

⁹² BETTE J. ROTH, RANDALL W. WOLFF & CHARLES A. COOPER, ALTERNATIVE DISPUTE RESOLUTION PRACTICE GUIDE, § 24.6 (2006).

⁹³ *Id.*

⁹⁴ GRENIG *supra* at § 22.51.

When non-binding arbitration is court ordered the advisory decision may become binding and final. In Florida, for example, a decision rendered in *non-binding* arbitration may be deemed binding if a party does not request a trial *de novo* within twenty days.⁹⁶ When this occurs, the presiding judge is obligated to reduce the decision to a judgment or order.⁹⁷

Many jurisdictions increasingly are requiring parties to submit their dispute to non-binding arbitration in the hopes that they will quickly and efficiently achieve resolution. For example, California’s Code of Civil Procedure provides that the “courts should encourage or require the use of arbitration for...actions whenever possible.”⁹⁸ Similarly, in Florida, courts have the power, whether *sua sponte* or on a party’s motion, to send the case to non-binding arbitration.⁹⁹ The benefits of obtaining a quick and efficient resolution may, however, be outweighed by the fact that the arbitrator is not bound to follow the law, but instead may base the decision on business custom and practice, technical insight or broad principles of equity and justice.¹⁰⁰

D. *Dispute Review Boards*

A Dispute Review Board, or “DRB,” also known as a Dispute Review Committee (“DRC”), is a hybrid of mediation and non-binding arbitration. However, unlike mediation and arbitration, which commences after the dispute has become unmanageable, the DRB process seeks to resolve construction disputes as they arise. In this respect, establishing DRB’s in larger projects where the delay and scheduling disputes often lay, can be of significant advantage.

⁹⁵ Id. at § 2.36.

⁹⁶ §44.103 (5), Fla. Stat. (2006); Fla. R. Civ. P. 1.820 (h). *See also Klein v. J.L. Howard, Inc.*, 600 So. 2d 511 (Fla. 4th DCA 1992).

⁹⁷ *Johnson v. Levine*, 736 So. 2d 1235 (Fla. 4th DCA 1999).

⁹⁸ CAL. CODE OF CIVIL PROCEDURE, § 1141.10 (2007).

⁹⁹ FLA. STAT. ANN. § 44.103 (2006; Fla. R. Civ. P. 1.820).

¹⁰⁰ GRENIG *supra* at § 2.36.

Resolution can be binding upon the parties' agreement or it can be non-binding, in which case the parties are free to pursue litigation or arbitration on any unresolved claim.

The "neutral" in a DRB is composed of a three person panel,¹⁰¹ two of whom are party appointed and a third who is selected by the appointees.¹⁰² All persons on the panel are experts within the specific type of construction that is the subject of the construction contract, and collectively, they are charged with developing and administering the dispute resolution process. Given the complexity of construction and delay related disputes, having a panel composed of members who are versed in construction and scheduling is a significant advantage over other fact-finders who first have to be educated on industry terms and practices.

A DRB is usually formed at the start of a construction project and meets at regular intervals, often at the project site, to follow the progress of the project and to provide guidance to the parties during the life the project.¹⁰³ Once the DRB is in place, it has the advantage of becoming very familiar with the project and with developing rapport with the parties involved, both of which aids in better understanding of the dispute, the history behind it and emotions fueling it. Thus, a DRB becomes an integral part of the project team and is put in place to provide swift, inexpensive, and satisfactory problem resolution throughout the project.¹⁰⁴

When a dispute arises, the parties present their respective positions to the DRB. The DRB has the authority to hold advisory hearings and to require the production of records (which

¹⁰¹ Smaller projects where a three person panel would not be reasonable still can take advantage of the DRB process. In this instance, the parties appoint a Dispute Resolution Specialist ("DRS") as a neutral. The DRS, who would be an expert in construction and trained in dispute resolution, would perform the same functions as DRB. JAMES K. HOENIG & KEITH W. HUNTER, ALTERNATIVE FORMS OF DISPUTE RESOLUTION PRACTICE GUIDE, § 36.6 (2007).

¹⁰² Of course, if the parties do not desire to have party-appointed members, they may jointly select the members. See *Id.* at § 36:8

¹⁰³ *Id.*

¹⁰⁴ *Id.* at § 36:3.

may remain confidential if appropriate).¹⁰⁵ The DRB privately deliberates and issues an independent assessment of the merits of the dispute and a proposed recommendation for resolution. The DRB process contemplates that the DRB's recommendations are accepted by the parties "because of the stature and expertise of the board members."¹⁰⁶

DRB is effective because it functions as early intervention. Several factors have been cited as contributing to the success of DRB's. One author summarized them as:¹⁰⁷

- The board meets on site regularly, promoting a partnering spirit and providing a face-saving alternative;
- Parties temper their approach to contractual matters in the knowledge that the DRB is watching;
- Claims and defenses under go a reality check by the parties before the parties engage in extensive acrimonious correspondence;
- Decisions or recommendations are provided rapidly, enabling the parties to retain their focus on the progress of the project, as opposed to the resolution of the dispute; and
- An unexpected dynamic develops as the parties who work regularly on the project see the dispute review board as the "other side," and usually the parties in dispute endeavor to compromise to avoid the process of board intervention.

Typically, participation in the DRB process is a contractual obligation of the parties; it may, however, be voluntary. When an owner intends for the process to be required of the contractor, the owner should either provide the terms and conditions of the DRB process in the

¹⁰⁵ *Id.* at § 36:7.

¹⁰⁶ GREINIG *supra* at § 15:50.

construction contract or include the sample form DRB agreement to be executed upon award of the contract in the bid specifications.¹⁰⁸ Generally, a DRB specification or agreement should include the following:

- A description of the DRB and the project to which it pertains;
- The duties of the DRB;
- Timing of site visits by or meetings with the DRB, which could provide for special meetings if and when required;
- The procedures for the conduct of the DRB hearings;
- Performance obligation of the owner and contractor to assist the DRB process;
- Board member replacement if it were to become necessary;
- Payment to the DRB for its services and expenses;
- Terms of confidentiality; and
- Termination of the DRB agreement.

Additionally, the DRB process is not limited to the participation between an owner and contractor. In fact, effective and efficient resolution may require the inclusion of the various parties providing services and affecting the project schedule. Depending upon the nature and size of the project, an owner could (and often should) require that the DRB process include subcontractors, material or equipment suppliers and fabricators. In this instance, the prime contract should specify that the contractor provide identical terms and conditions of the DRB agreement in each of its subcontract agreements.

¹⁰⁷ PETER MILLS, HOW TO AVOID THE SPECTRE OF ARBITRATION (Newsroom from Thompson/West) (2006).

¹⁰⁸ See the ASCE Specification on Dispute Review Boards for an example of such an agreement.

The existence of a DRB procedure in a construction contract does not automatically mean that submitting a claim to the DRB is a condition precedent to litigation or arbitration. If a contract does not explicitly make the DRB or DRC process a condition precedent, a party may not be obligated to submit its claim to the DRB.¹⁰⁹ In *Bombardier Corp. v. National Rail Road Passenger Corp. (Amtrak)*, Amtrak moved to dismiss the contractor's lawsuit on the grounds that the contractor failed to submit its delay and disruption claim to the DRB prior to initiating litigation. The court denied Amtrak's motions. While recognizing that the parties established the DRB as dispute resolution process, the contract did not expressly and unequivocally require DRB as condition precedent to litigation. Thus, where the parties want their claims submitted to a DRB as a condition precedent to a binding action, the terms of the DRB must use mandatory language stating this intent. Moreover, when drafting the terms of the DRB agreement, the parties must contemplate and consequently specify whether the DRB process is limited to disputes that arise during construction or whether the process extends to post-performance claims. A party's obligation to submit its claim to the DRB after the completion of the project also will depend upon the express contractual terms of the dispute resolution procedures.¹¹⁰

Similar to the other forms of ADR, a DRB's non-binding recommendations or decisions would be protected under the rules of confidentiality that apply to settlement negotiations and therefore would be inadmissible if the parties pursue litigation or arbitration. The parties, however, in the DRB agreement can specifically provide that the recommendations and conclusions of the DRB will be admissible.¹¹¹

¹⁰⁹ *Bombardier Corp. v. Nat'l Railroad Passenger Corp.*, 333 F.3d 250 (D.C. Civ. 2003).

¹¹⁰ *Id.*

E. *Declaratory Judgment Actions*

Unlike the dispute resolution methods discussed above, a declaratory judgment action requires the filing of a lawsuit. Nevertheless, a declaratory judgment action still may be beneficial in narrowing or clarifying disputed issues before a party initiates either some form of ADR or the actual litigation or arbitration proceedings. In this sense, a declaratory judgment action can serve to “nip controversies in the bud” or narrow the issues in dispute.

In a declaratory judgment action a party asks a court to determine its rights, status or privileges when the existence or nonexistence of such rights, status or privileges is in question. In some jurisdictions, a party may seek the court’s determination even if such rights, status or privileges may arise in the future.¹¹² A declaratory judgment action, however, may not be used to settle factual issues bearing on a party’s liability under the terms of an otherwise unambiguous contract.¹¹³

A party may not be deemed to have waived its right to ADR procedures by commencing a declaratory judgment action in the presence of a contractual obligation to engage in ADR as a condition precedent to litigation. For example, a party who commences a declaratory judgment action to obtain a ruling requiring arbitration may nevertheless enforce its right to arbitrate.¹¹⁴ Similarly, when a party commences a judicial action on an arbitable claim, but continues to pursue arbitration, it likely will not have waived its right to arbitrate.¹¹⁵

¹¹¹ HOENIG *supra* at 36:12.

¹¹² FLA. STAT. ANN. § 86.011 (2006).

¹¹³ *Burns v. Hartford Acc. & Indem. Co.*, 157 So. 2d 84 (Fla. 1963). *Also see Reddick v. Christie*, 226 So. 2d 434 (Fla. 1969) (dismissing claim for declaratory judgment that various sums were owed to contractor and subcontractor).

¹¹⁴ *Philips v. General Accident Ins. Co.*, 685 So.2d 27 (Fla. 3d DCA 1996).

¹¹⁵ *See Glass v. Kidder Peabody & Co.*, 114 F.3d 344 (4th Cir. 1997).

VIII. Conclusion

Proving and defending delay and impact claims is an intricate process and not for amateurs. As this paper illustrates, there are keys to success, which begin with risk allocation in the contract and careful drafting of contract clauses and specifications, along with reasonable and prompt schedule updates, notice and documentation of delay, causation, and damages. Having an accurate and well planned baseline schedule, promptly approved by the owner at the beginning of the project, will benefit both parties if delay on the project occurs. Regular schedule updates during the course of performance will assist in managing and measuring the effect of delays. Structuring a form of alternative dispute resolution to handle claims on the project as they occur can avoid costly and protracted litigation or arbitration. There is no telling in the historical record on how Rome's delay and impact claims were resolved, but the practice points and techniques described in this paper would have been a benefit to Caesar in resolving those claims.